

# Guilherme Augusto Silva Pereira

Associate Professor of Robotics

Mechanical and Aerospace Engineering Department  
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## Education

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- 03/2000–11/2003 **Ph.D. in Computer Science**  
Dissertation: Motion Planning and Control of Cooperating Mobile Robots: A Graph Connectivity Approach.  
Advisors: Mario Fernando Montenegro Campos and Vijay Kumar.  
Federal University of Minas Gerais (UFMG), Brazil with collaborative period at the University of Pennsylvania (UPENN), USA.
- 11/1998–02/2000 **M.Sc. in Electrical Engineering**  
Thesis: Identification and Control of Micro Mobile Robots.  
Supervisor: Mario Fernando Montenegro Campos.  
Federal University of Minas Gerais (UFMG), Brazil.
- 08/1993–10/1998 **B.Sc. in Electrical Engineering** (with Distinction)  
Senior project: Design and Development of an Autonomous Vehicle.  
Supervisor: Walmir Matos Caminhas.  
Federal University of Minas Gerais (UFMG), Brazil.
- 02/1990–12/1992 **Electronics Technician**  
Federal Center for Technical Education of Minas Gerais (CEFET-MG), Brazil.

## Appointments

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- 10/2018–present **Associate Professor** – Department of Mechanical and Aerospace Engineering, Benjamin Statler College of Engineering and Mineral Resources, West Virginia University (WVU), USA. <http://www.wvu.edu>.
- 01/2020–present **Adjunct Associate Professor** – Lane Department of Computer Science and Electrical Engineering, Benjamin Statler College of Engineering and Mineral Resources, West Virginia University (WVU).
- 08/2015–07/2016 **Visiting Scholar** – Field Robotics Center, Robotics Institute, Carnegie Mellon University (CMU), USA.
- 07/2012–07/2018 **Associate Professor** – Department of Electrical Engineering, School of Engineering, Federal University of Minas Gerais (UFMG), Brazil. <http://www.ufmg.br>.
- 07/2004–07/2012 **Assistant Professor** – Department of Electrical Engineering, School of Engineering, Federal University of Minas Gerais (UFMG), Brazil.
- 08/2003–06/2004 **Assistant Professor** – Pontifical Catholic University of Minas Gerais (PUC Minas), Brazil.
- 10/2001–04/2003 **Visiting Scholar** – General Robotics Automation Sensing and Perception Laboratory (GRASP Lab.), School of Engineering and Applied Science, University of Pennsylvania (UPENN), USA.

## Administrative Assignments

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- 07/2023–present **Chairperson** – Robotics Engineering Curriculum Committee, Department of Mechanical and Aerospace Engineering, Benjamin Statler College of Engineering and Mineral Resources, West Virginia University (WVU).
- 05/2022–present **Chairperson** – Diversity, Equity, and Inclusion (DEI) Committee, Department of Mechanical and Aerospace Engineering, Benjamin Statler College of Engineering and Mineral Resources, West Virginia University (WVU).

- 11/2018–present **Director** – Field and Aerial Robotics Laboratory (FARO), Department of Mechanical and Aerospace Engineering, Benjamin Statler College of Engineering and Mineral Resources, West Virginia University (WVU), USA. <https://farolab.wvu.edu/> Twitter: @FaroWVU
- 07/2011–07/2014 **Deputy Coordinator** (Deputy Chairperson) – Graduate Program in Electrical Engineering (PPGEE), School of Engineering, Federal University of Minas Gerais (UFMG), Brazil. <http://www.ppgEE.ufmg.br>
- 12/2007–05/2008 **Coordinator** (Chairperson) – Undergraduate Program in Control and Automation Engineering, School of Engineering, Federal University of Minas Gerais (UFMG), Brazil.
- 05/2006–12/2007 **Deputy Coordinator** (Deputy Chairperson) – Undergraduate Program in Control and Automation Engineering, School of Engineering, Federal University of Minas Gerais (UFMG), Brazil.
- 10/2004–08/2018 **Director** – Computer Systems and Robotics Laboratory (CORO), School of Engineering, Department of Electrical Engineering, Federal University of Minas Gerais (UFMG), Brazil. <http://coro.cpdee.ufmg.br>

## Professional Affiliations

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- SENIOR MEMBER **IEEE – Institute of Electrical and Electronics Engineers** (member since 1999).
- Vice-chair of the Robotics and Automation Society Brazilian Chapter (2016–2017).
  - Co-founder and Chair of the Robotics and Automation Society Brazilian Chapter (2015).
  - Memberships
    - Robotics and Automation Society.
    - Intelligent Transportation Systems Society (until 2014).
    - Control Systems Society (until 2014).
    - Systems, Man, and Cybernetics Society (until 2002).
    - Education Society (until 2001).
- MEMBER **ASEE – American Society for Engineering Education.** (2019–2020)
- MEMBER **SBA – Brazilian Society for Automatics.** (1998 – 2019)
- Chair of the Robotics Technical Committee (2013–2014).

## Awards/Honors

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- 2023 Advisor of a Runner-up Poster Presentation of the Physical Sciences & Engineering category at the 2023 Summer Undergraduate Research Symposium. Student Leonardo Peele. West Virginia University (WVU).
- 2022 Advisor of **The Best Poster Presentation** of the Physical Sciences & Engineering category at the 2022 Fall Undergraduate Research Symposium. Student Alexander Flash. West Virginia University (WVU).
- 2018 Advisor of **The Best Master Thesis**, Student Elias Freitas, Contest of Thesis and Dissertations, Robotica 2018, Brazilian Computer Society (SBC), Brazil.
- 2016–2018 Research Productivity Fellowship, National Council for Scientific and Technological Development (CNPq), Brazil.
- 2015–2016 Postdoctoral Fellowship, National Council for Scientific and Technological Development (CNPq), Brazil.
- 2014 **The Advanced Robotics Best Paper Award**, The Robotics Society of Japan (RSJ).
- 2013–2015 Research Productivity Fellowship, National Council for Scientific and Technological Development (CNPq), Brazil.
- 2010–2012 Research Productivity Fellowship, National Council for Scientific and Technological Development (CNPq), Brazil.
- 2009 One of four finalists for **The Student Best Paper Award** of The 2009 American Control Conference (ACC'09), The American Automatic Control Council - AACC.
- 2007–2009 Research Productivity Fellowship, National Council for Scientific and Technological Development (CNPq), Brazil.
- 2006 **The Best Poster Award** of the 12th Biennial IEEE Conference on Electromagnetic Field Computation (CEFC'06), The Institute of Electrical and Electronics Engineers - IEEE.
- 2004 One of three finalists for **The Best Conference Paper Award** of the Design Engineering Technical Conferences 2004, The American Society of Mechanical Engineers - ASME.
- 2000-2003 Doctoral Fellowship, National Council for Scientific and Technological Development (CNPq), Brazil.

2001-2002	Sandwich PhD Fellowship, National Council for Scientific and Technological Development (CNPq), Brazil.
1998-2000	Masters Fellowship, Coordination for the Improvement of Higher Education Personnel (CAPES), Brazil.
1998	<b>Gold Medal Award</b> for gathering the <b>first place</b> among the electrical engineers, class of 1998, School of Engineering, Federal University of Minas Gerais, Brazil.

## Citation Metrics

**GOOGLE SCHOLAR** Publications: **141** Citations: **3301** H-index: **25** Date: September 21, 2023

**WEB OF SCIENCE** Publications: **72** Citations: **1407** H-index: **19** Date: September 21, 2023

**SCOPUS** Publications: **82** Citations: **1799** H-index: **20** Date: September 21, 2023

## Publications

Total number of publications: **136** \*PhD, †Masters, and +Undergraduate students supervised

**Peer-reviewed journal papers (38)** (average *Journal of Citation Reports (JCR 2022) Impact Factor (IF)*: **3.95**)

1. R. Lima\*, B. Martinez R. Junior\*, and **G. A. S. Pereira**, “Continuous Vector Fields for Precise Cable-Guided Landing of Tethered UAVs,” *IEEE Robotics and Automation Letters*, vol. 8, issue 7, pp. 4370–4377, July 2023. DOI: [10.1109/LRA.2023.3281940](https://doi.org/10.1109/LRA.2023.3281940) *JCR IF*: 5.2
2. R. Lima\* and **G. A. S. Pereira** “A Multi-model framework for Tether-based Drone Localization,” *Journal of Intelligent & Robotic Systems*, vol 108, issue 2, pp. 20, 2023. DOI: [10.1007/s10846-023-01851-0](https://doi.org/10.1007/s10846-023-01851-0) *JCR IF*: 3.3
3. B. Martinez R. Junior\*, C. Kilic, C. A. Tatsch, **G. A. S. Pereira**, and J. N. Gross, “Multi-Robot Cooperation for Lunar In-Situ Resource Utilization,” *Frontiers in Robotics and AI*, vol 10, 2023. DOI: [10.3389/frobt.2023.1149080](https://doi.org/10.3389/frobt.2023.1149080) *JCR IF*: 3.4
4. B. Martinez R. Junior\*, R. Lima\*, K. Samarakoon, J. Rathjen†, J. N. Gross, and **G. A. S. Pereira**, “Oxpecker: A Tethered UAV for Inspection of Stone-Mine Pillars,” *Drones*, vol 7, issue 2, pp. 73, 2023. DOI: [10.3390/drones7020073](https://doi.org/10.3390/drones7020073) *JCR IF*: 4.8
5. A. Keipour, **G. A. S. Pereira**, R. Bonatti, R. Garg, P. Rastogi, G. Dubey, S. Scherer, “Visual Servoing Approach to Autonomous UAV Landing on a Moving Vehicle,” *Sensors*, vol 22, issue 17, pp. 6549, 2022. DOI: [10.3390/s22176549](https://doi.org/10.3390/s22176549) *JCR IF*: 3.9
6. B. Martinez R. Junior\* and **G. A. S. Pereira**, “Parallel Sensor-Space Lattice Planner for Real-Time Obstacle Avoidance”, *Sensors*, vol 22, issue 13, pp. 4770, 2022. DOI: [10.3390/s22134770](https://doi.org/10.3390/s22134770) *JCR IF*: 3.9
7. C. Kilic, B. Martinez R. Junior\*, C. A. Tatsch, J. Beard, J. Strader, S. Das, D. Ross, Y. Gu, **G. A. S. Pereira**, and J. N. Gross, “NASA Space Robotics Challenge 2 Qualification Round: An Approach to Autonomous Lunar Rover Operations,” *IEEE Aerospace and Electronic Systems Magazine*, vol 36, issue 12, pp. 24 – 41, Dec. 2021. DOI: [10.1109/MAES.2021.3115897](https://doi.org/10.1109/MAES.2021.3115897). *JCR IF*: 3.6
8. A. Keipour, **G. A. S. Pereira**, and S. Scherer, “Real-Time Ellipse Detection for Robotics Applications,” *IEEE Robotics and Automation Letters*, vol 6, issue 4, pp. 7009 – 7016, October 2021. DOI: [10.1109/LRA.2021.3097057](https://doi.org/10.1109/LRA.2021.3097057) *JCR IF*: 5.2
9. R. M. Gago, M. Y. A. Pereira, and **G. A. S. Pereira**, “An Aerial Robotic System for Inventory of Stockpile Warehouses,” *Engineering Reports*, vol 3, issue 9, pp. e12396, September 2021. DOI: [10.1002/eng2.12396](https://doi.org/10.1002/eng2.12396) *JCR IF*: 2.0
10. D. Shapovalov† and **G. A. S. Pereira**, “Tangle-Free Exploration with a Tethered Mobile Robot,” *Remote Sensing*, vol 12, issue 23, pp. 3858, 2020. DOI: [10.3390/rs12233858](https://doi.org/10.3390/rs12233858) *JCR IF*: 5.0
11. **G. A. S. Pereira** and E. J. R. Freitas†, “Navigation of Semi-autonomous Service Robots using Local Information and Anytime Motion Planners,” *Robotica*, vol 38, issue 11, pp. 2080–2098, Nov. 2020. DOI: [10.1017/S0263574719001838](https://doi.org/10.1017/S0263574719001838) *JCR IF*: 2.7
12. V. M. Gonçalves, R. McLaughlin\*, and **G. A. S. Pereira**, “Precise Landing of Autonomous Aerial Vehicles using Vector Fields,” *IEEE Robotics and Automation Letters*, vol 5, issue 3, pp. 4337–4344, July 2020. DOI: [10.1109/LRA.2020.2994485](https://doi.org/10.1109/LRA.2020.2994485) *JCR IF*: 5.2
13. A. C. B Chiella\*, H. N. Machado†, B. O. Teixeira, and **G. A. S. Pereira**, “GNSS/LiDAR-Based Navigation of an Aerial Robot in Sparse Forests,” *Sensors*, vol 19, issue 19, pp. 4061, 2019. DOI: [10.3390/s19194061](https://doi.org/10.3390/s19194061) *JCR IF*: 3.9
14. A. C. B Chiella\*, B. O. Teixeira, and **G. A. S. Pereira**, “Quaternion-Based Robust Attitude Estimation Using an Adaptive Unscented Kalman Filter,” *Sensors*, vol 19, issue 10, pp. 2372, 2019. DOI: [10.3390/s19102372](https://doi.org/10.3390/s19102372) *JCR IF*: 3.9
15. R. F. Santos\*, **G. A. S. Pereira**, and L. A. Aguirre, “Learning Robot Reaching Motions by Demonstration using Nonlinear Autoregressive Models,” *Robotics and Autonomous Systems*, vol 107, pp. 182–195, September 2018. DOI: [10.1016/j.robot.2018.06.006](https://doi.org/10.1016/j.robot.2018.06.006) *JCR IF*: 4.3

16. R. J. Alitappeh, **G. A. S. Pereira**, A. R. Araújo<sup>+</sup>, and L. C. A. Pimenta, “Multi-robot Deployment using Topological Maps,” *Journal of Intelligent & Robotic Systems*, vol 86, issue 3, pp. 641–661, June 2017. DOI: [10.1007/s10846-017-0471-3](https://doi.org/10.1007/s10846-017-0471-3) JCR IF: 3.3
17. G. S. C. Avellar<sup>†</sup>, **G. A. S. Pereira**, L. C. A. Pimenta, and P. Iscold, “Multi-UAV Routing for Area Coverage and Remote Sensing with Minimum Time,” *Sensors*, vol 15, pp. 27783–27803, 2015. DOI: [10.3390/s151127783](https://doi.org/10.3390/s151127783) JCR IF: 3.9
18. N. C. Batista\* and **G. A. S. Pereira**, “A Probabilistic Approach for Fusing People Detectors,” *Journal of Control, Automation and Electrical Systems*, vol 26, pp. 616–629, 2015. DOI: [10.1007/s40313-015-0202-6](https://doi.org/10.1007/s40313-015-0202-6) JCR IF: 1.5
19. J. E. A. Dias<sup>†</sup>, **G. A. S. Pereira**, and R. M. Palhares, “Longitudinal Model Identification and Velocity Control of an Autonomous Car,” *IEEE Transactions on Intelligent Transportation Systems*, vol. 16, no. 2 pp. 776–786, April 2015. DOI: [10.1109/TITS.2014.2341491](https://doi.org/10.1109/TITS.2014.2341491) JCR IF: 8.5
20. D. N. Brito, F. L. C. Pádua, and **G. A. S. Pereira**, “Temporal Synchronization in Mobile Sensor Networks Using Image Sequence Analysis,” *Machine Vision and Applications*, vol. 25, no. 4, pp. 1067–1076, May 2014. DOI: [10.1007/s00138-014-0605-6](https://doi.org/10.1007/s00138-014-0605-6) JCR IF: 3.3
21. L. C. A. Pimenta, **G. A. S. Pereira**, M. M. Gonçalves<sup>†</sup>, N. Michael, M. Turpin, and V. Kumar, “Decentralized Controllers for Perimeter Surveillance with Teams of Aerial Robots,” *Advanced Robotics*, vol. 27, pp. 697–709, 2013. (This paper won **The Advanced Robotics Best Paper Award 2014**.) DOI: [10.1080/01691864.2013.778942](https://doi.org/10.1080/01691864.2013.778942) JCR IF: 2.0
22. L. C. A. Pimenta\*, **G. A. S. Pereira**, N. Michael, R. C. Mesquita, M. M. Bosque, L. Chaimowicz, and V. Kumar, “Swarm Coordination Based on Smoothed Particle Hydrodynamics Technique,” *IEEE Transactions on Robotics*, vol. 29, no. 2, pp. 383–399, April 2013. DOI: [10.1109/TRO.2012.2234294](https://doi.org/10.1109/TRO.2012.2234294) JCR IF: 7.8
23. D. A. Lima<sup>†</sup> and **G. A. S. Pereira**, “Navigation of an Autonomous Car using Vector Fields and the Dynamic Window Approach,” *Journal of Control, Automation and Electrical Systems*, vol. 24, no. 1-2, pp. 106–116, April 2013. DOI: [10.1007/s40313-013-0006-5](https://doi.org/10.1007/s40313-013-0006-5) JCR IF: 1.5
24. D. N. Brito, F. L. C. Pádua, **G. A. S. Pereira**, and R. L. Carceroni, “Temporal Synchronization of Non-overlapping Videos using Known Object Motion,” *Pattern Recognition Letters*, vol. 32, no. 1, pp. 38–46, January 2011. DOI: [10.1016/j.patrec.2010.02.011](https://doi.org/10.1016/j.patrec.2010.02.011) JCR IF: 5.1
25. M. A. G. Moreira<sup>†</sup>, **G. A. S. Pereira**, L. A. B. Torres, and P. Iscold, “Localization, Modelling, and Control of a Mini-helicopter in Indoor Environments,” *Controle & Automação*, vol. 22, no. 3, pp. 238–255, May/June 2011. DOI: [10.1590/S0103-17592011000300003](https://doi.org/10.1590/S0103-17592011000300003)
26. P. Iscold, **G. A. S. Pereira**, and L. A. B. Torres, “The Development of a Hand-launched Small UAV for Ground Reconnaissance,” *IEEE Transactions on Aerospace and Electronic Systems*, vol. 46, no. 1, pp. 335–348, January 2010. DOI: [10.1109/TAES.2010.5417166](https://doi.org/10.1109/TAES.2010.5417166) JCR IF: 4.4
27. V. M. Gonçalves<sup>+</sup>, L. C. A. Pimenta, C. A. Maia, B. C. O. Dutra<sup>+</sup>, and **G. A. S. Pereira**, “Vector Fields for Robot Navigation Along Time-varying Curves in  $n$ -dimensions,” *IEEE Transactions on Robotics*, vol. 26, no. 4, pp. 647–659, August 2010. DOI: [10.1109/TRO.2010.2053077](https://doi.org/10.1109/TRO.2010.2053077) JCR IF: 7.8
28. V. M. Gonçalves<sup>+</sup>, L. C. A. Pimenta, C. A. Maia, and **G. A. S. Pereira**, “Robot Navigation using Implicit Curves,” *Controle & Automação*, vol. 21, no. 1, pp. 43–57, January/February 2010. DOI: [10.1590/S0103-17592010000100004](https://doi.org/10.1590/S0103-17592010000100004)
29. **G. A. S. Pereira**, L. C. A. Pimenta\*, L. Chaimowicz, A. R. Fonseca<sup>†</sup>, D. S. C. Almeida, L. Q. Corrêa, R. C. Mesquita, and M. F. M. Campos, “Robot Navigation in Multi-terrain Outdoor Environments,” *The International Journal of Robotics Research*, vol. 28, no. 6, pp. 685–700, June 2009. DOI: [10.1177/0278364908097578](https://doi.org/10.1177/0278364908097578) JCR IF: 9.2
30. **G. A. S. Pereira**, V. Kumar, and M. F. M. Campos, “Closed Loop Motion Planning of Cooperating Mobile Robots using Graph Connectivity,” *Robotics and Autonomous Systems*, vol. 56, no. 4, pp. 373–384, April 2008. DOI: [10.1016/j.robot.2007.08.003](https://doi.org/10.1016/j.robot.2007.08.003) JCR IF: 4.3
31. **G. A. S. Pereira**, P. Iscold, and L. A. B. Torres, “Airplane Attitude Estimation using Computer Vision: Simple Method and Actual Experiments,” *Electronics Letters*, vol. 44, no. 22, pp. 1303–1305, Oct. 2008. DOI: [10.1049/el:20081184](https://doi.org/10.1049/el:20081184) JCR IF: 1.1
32. D. A. P. Nagem, M. A. G. Moreira<sup>+</sup>, **G. A. S. Pereira**, C. J. Tierra-Criollo, M. B. Pinotti, “Development of the Relations for the Interphalange and Metacharpo-phalange During Grasp Movement,” *Matéria*, vol. 12, pp. 179–185, 2007. DOI: [10.1590/S1517-70762007000100023](https://doi.org/10.1590/S1517-70762007000100023)
33. L. C. A. Pimenta\*, M. L. Mendes, R. C. Mesquita, and **G. A. S. Pereira**, “Fluids in Electrostatic Fields: An analogy for Multi-robot Control,” *IEEE Transactions on Magnetics*, vol. 43, no. 4, pp. 1765–1768, April 2007. DOI: [10.1109/TMAG.2007.892514](https://doi.org/10.1109/TMAG.2007.892514) JCR IF: 2.1
34. **G. A. S. Pereira**, M. F. M. Campos, and L. A. Aguirre, “Data-based Dynamical Modeling of Externally Observed Actuators-only Robots,” *IEEE Transactions on System, Man, and Cybernetics - Part A*, vol. 36, no. 4, pp. 706–717, July 2006. DOI: [10.1109/tsmca.2005.854372](https://doi.org/10.1109/tsmca.2005.854372) JCR 2012 Impact Factor: 2.183



35. L. C. A. Pimenta\*, A. R. Fonseca†, **G. A. S. Pereira**, R. C. Mesquita, E. J. Silva, W. M. Caminhas, and M. F. M. Campos, “Robot Navigation based on Electrostatic Field Computation,” *IEEE Transactions on Magnetics*, vol. 42, no. 4, pp. 1459–1462, April 2006. DOI: [10.1109/TMAG.2006.870931](https://doi.org/10.1109/TMAG.2006.870931) JCR IF: 2.1
36. F. Zhang, **G. A. S. Pereira**, and V. Kumar, “Cooperative Localization and Tracking in Distributed Robot-Sensor Networks,” *Tsinghua Science and Technology*, vol. 10, no. 1, pp. 91–101, Feb. 2005. DOI: [10.1016/S1007-0214\(05\)70014-6](https://doi.org/10.1016/S1007-0214(05)70014-6) JCR IF: 6.6
37. **G. A. S. Pereira**, V. Kumar, and M. F. M. Campos, “Decentralized Algorithms for Multi-Robot Manipulation via Caging,” *The International Journal of Robotics Research*, vol. 23, no. 7, pp. 783–795, July 2004. DOI: [10.1177/0278364904045477](https://doi.org/10.1177/0278364904045477) JCR IF: 9.2
38. M. F. M. Campos, **G. A. S. Pereira**, S. R. C. Vale, A. Q. Bracarense, G. A. Pinheiro, and M. P. Oliveira, “A Robot for Installation and Removal of Aircraft Warning Spheres on Aerial Power Transmission Lines,” *IEEE Transactions on Power Delivery*, vol. 18, no. 4, pp. 1581–1582, October 2003. DOI: [10.1109/TPWRD.2003.817538](https://doi.org/10.1109/TPWRD.2003.817538) JCR IF: 4.4

### Non peer-Reviewed journal paper

1. **G. A. S. Pereira**, P. L. J. Drews-Jr, D. F. Wolf, L. S. Mattos “ICAR 2019 Special Issue,” *Journal of Intelligent & Robotic Systems*, vol 102, no. 88, pp 1–2, July 2021. DOI: [10.1007/s10846-021-01460-9](https://doi.org/10.1007/s10846-021-01460-9) JCR IF: 3.3

### Book chapters (12)

1. E. J. R. Freitas† and **G. A. S. Pereira**, “Uma Estratégia para Navegação de Robôs de Serviço Semiautônomos usando informação local e planejadores probabilísticos,” in *Tecnologias, Métodos e Teorias na Engenharia de Computação*, E. R. Martins Ed. Ponta Grossa, PR: Atena, 2020, pp. 196–213. DOI: [10.22533/at.ed.613200409](https://doi.org/10.22533/at.ed.613200409)
2. L. Chaimowicz, **G. A. S. Pereira**, and M. F. M. Campos, “Robótica Cooperativa,” in *Robótica Móvel*, R. A. F. Romero, E. Prestes, F. Osório, and D. F. Wolf. Eds. Rio de Janeiro: LTC - Livros Técnicos e Científicos Editora Ltda., 2014, pp. 242–255.
3. L. C. A. Pimenta\*, M. Schwager, Q. Lindsey, V. Kumar, D. Rus, R. C. Mesquita, and **G. A. S. Pereira**, “Simultaneous coverage and tracking (SCAT) of moving target with robot networks,” in *Algorithmic Foundations of Robotics VIII - Selected Contributions of the Eighth International Workshop on the Algorithmic Foundations of Robotics*, 1st ed., G. S. Chirikjian, H. Choset, M. Morales, and T. Murphey, Eds. Springer-Verlag, 2010, vol. 57, pp. 85–99. DOI: [10.1007/978-3-642-00312-7\\_6](https://doi.org/10.1007/978-3-642-00312-7_6)
4. **G. A. S. Pereira**, L. C. A. Pimenta\*, L. Chaimowicz, A. R. Fonseca†, D. S. C. de Almeida, L. de Q. Corrêa, R. C. Mesquita, and M. F. M. Campos, “Robot navigation in multi-terrain outdoor environments,” in *Experimental Robotics: The 10th International Symposium on Experimental Robotics*, ser. STAR - Springer Tracts on Advanced Robotics, O. Khatib, V. Kumar, and D. Rus, Eds. Springer-Verlag, 2008, vol. 39, pp. 331–342. DOI: [10.1007/978-3-540-77457-0\\_31](https://doi.org/10.1007/978-3-540-77457-0_31)
5. **G. A. S. Pereira** and L. Chaimowicz, “Robôs móveis,” in *Enciclopédia de Automática: Controle e Automação*, L. A. Aguirre, A. P. A. da Silva, M. F. M. Campos, and W. C. do Amaral, Eds. São Paulo: Editora Blucher, 2007, vol. 3, pp. 369–386.
6. A. R. Fonseca†, L. C. A. Pimenta\*, R. C. Mesquita, R. R. Saldanha, and **G. A. S. Pereira**, “Path planning for mobile robots operating in outdoor environments using map overlay and triangular decomposition,” in *ABCN Symposium Series in Mechatronics*. Ouro Preto, Brasil: Associação Brasileira de Engenharia e Ciências Mecânicas, Novembro 2006, vol. 2, pp. 218–225.
7. G. Kantor, S. Singh, R. Peterson, D. Rus, A. K. Das, V. Kumar, **G. A. S. Pereira**, and J. Spletzer, “Distributed search and rescue with robot and sensor teams,” in *Field and Service Robotics: Recent Advances in Research and Applications*, ser. STAR - Springer Tracts on Advanced Robotics, H. Asama, S. Yuta, S. Thrun, and E. Prassler, Eds. Springer-Verlag, 2006, vol. 24, pp. 529–538. DOI: [10.1007/10991459\\_51](https://doi.org/10.1007/10991459_51)
8. C. Belta, **G. A. S. Pereira**, and V. Kumar, “Abstraction and control for swarms of robots,” in *Robotics Research*, ser. STAR, P. Dario and R. Chatila, Eds. Springer-Verlag, 2005, pp. 224–233. DOI: [10.1007/11008941\\_24](https://doi.org/10.1007/11008941_24)
9. **G. A. S. Pereira**, V. Kumar, and M. F. M. Campos, “Decentralized algorithms for multirobot manipulation via caging,” in *Algorithmic Foundations of Robotics V*, ser. STAR, J. D. Boissonnat, J. Burdick, K. Goldberg, and S. Hutchinson, Eds. Heidelberg: Springer-Verlag, 2004, pp. 257–273. DOI: [10.1007/978-3-540-45058-0\\_16](https://doi.org/10.1007/978-3-540-45058-0_16)
10. **G. A. S. Pereira**, A. Das, V. Kumar, and M. F. M. Campos, “Decentralized motion planning for multiple robots subject to sensing and communication constraints,” in *Multi-Robot Systems: From Swarms to Intelligent Automata, Volume II*, A. Schultz, L. E. Parker, and F. Schneider, Eds. Kluwer Academic Press, 2003, pp. 267–278.
11. **G. A. S. Pereira**, V. Kumar, J. Spletzer, C. J. Taylor, and M. F. M. Campos, “Cooperative transport of planar objects by multiple mobile robots using object closure,” in *Experimental Robotics VIII*, ser. STAR, B. Siciliano and P. Dario, Eds. Heidelberg: Springer-Verlag, 2003, pp. 275–284. DOI: [10.1007/3-540-36268-1\\_25](https://doi.org/10.1007/3-540-36268-1_25)
12. M. F. M. Campos, A. Q. Bracarense, **G. A. S. Pereira**, G. A. Pinheiro, M. P. Oliveira, and S. R. C. Vale, “Robotized installation of signaling aerial spheres in transmission lines cables,” in *Intelligent Assembly and Disassembly 2001*, P. Kopacek, C. E. Pereira, and D. Noe, Eds. Elsevier Science Ltd, 2002, pp. 91–100.

## Peer-reviewed papers in international conferences (38)

1. A. Puigvert I Juan<sup>†</sup>, B. Martinez R. Junior\*, and **G. A. S. Pereira**, “Wind-Aware Path Optimization for an Aerobot in the Atmosphere of Venus Using Genetic Algorithms,” in *Proceedings of the International Conference on Unmanned Aircraft Systems (ICUAS’23)*, Warsaw, Poland, June 2023, pp. 249–256. DOI: [10.1109/ICUAS57906.2023.10156502](https://doi.org/10.1109/ICUAS57906.2023.10156502)
2. I. M. Rahman<sup>+</sup>, S. White IV<sup>+</sup>, K. Crockett<sup>+</sup>, Y. Gu, D. A. A. Dutra, and **G. A. S. Pereira**, “Imitating Swarm Behaviors by Learning Agent-Level Controllers,” in *Proceedings of the American Control Conference (ACC’23)*, San Diego, CA, USA, May/June 2023, pp. 7–13 DOI: [10.23919/ACC55779.2023.10156561](https://doi.org/10.23919/ACC55779.2023.10156561)
3. B. Martinez R. Junior\*, A. Puigvert I Juan<sup>†</sup>, and **G. A. S. Pereira**, “Towards Finding Energy Efficient Paths for Hybrid Airships in the Atmosphere of Venus,” in *Proceedings of the International Conference on Unmanned Aircraft Systems (ICUAS’22)*, Dubrovnik, Croatia, June 2022, pp. 386–393. DOI: [10.1109/ICUAS54217.2022.9836111](https://doi.org/10.1109/ICUAS54217.2022.9836111)
4. R. Lima\* and **G. A. S. Pereira**, “Drone Collision Detection and Classification using Proprioceptive Data,” in *Proceedings of the International Conference on Unmanned Aircraft Systems (ICUAS’22)*, Dubrovnik, Croatia, June 2022, pp. 562–569. DOI: [10.1109/ICUAS54217.2022.9836207](https://doi.org/10.1109/ICUAS54217.2022.9836207)
5. K. Samarakoon, **G. A. S. Pereira**, and Jason Gross, “Impact of the Trajectory on the Performance of RGB-D SLAM Executed by a UAV in a Subterranean Environment,” in *Proceedings of the International Conference on Unmanned Aircraft Systems (ICUAS’22)*, Dubrovnik, Croatia, June 2022, pp. 812–820. DOI: [10.1109/ICUAS54217.2022.9836199](https://doi.org/10.1109/ICUAS54217.2022.9836199)
6. R. Lima\* and **G. A. S. Pereira**, “On the Development of a Tether-based Drone Localization System,” in *Proceedings of the International Conference on Unmanned Aircraft Systems (ICUAS’21)*, Athens, Greece, June 2021, pp. 195–201. DOI: [10.1109/ICUAS51884.2021.9476778](https://doi.org/10.1109/ICUAS51884.2021.9476778)
7. B. Martinez R. Junior\* and **G. A. S. Pereira**, “Fast Path Computation using Lattices in the Sensor-Space for Forest Navigation”, in *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA’21)*, Xi’an, China, May-June 2021, pp. 1117–1123 (Acceptance rate: 48%). DOI: [10.1109/ICRA48506.2021.9561241](https://doi.org/10.1109/ICRA48506.2021.9561241)
8. D. Shapovalov<sup>†</sup> and **G. A. S. Pereira**, “Exploration of unknown environments with a tethered mobile robot”, in *Proceedings of the IEEE/RSJ International Conference on Intelligent Robot and Systems (IROS’20)*, Las Vegas, October 2020, pp. 6826–6831. (Acceptance rate: 47%). DOI: [10.1109/IROS45743.2020.9340993](https://doi.org/10.1109/IROS45743.2020.9340993)
9. N. Dhanaraj, N. Hewitt, C. Edmonds-Estes, R. Jarman, J. Seo, H. Gunner, A. Hatfield, T. Johnson, L. Yifru, J. Maffeo, **G. A. S. Pereira**, J. Gross, and Y. Gu, “Adaptable Platform for Interactive Swarm Robotics (APIS): A Human-Swarm Interaction Research Testbed”, *Proceedings of the International Conference on Advanced Robotics (ICAR’19)*, Belo Horizonte, December 2019, pp. 720–726. (Acceptance rate: 56%). DOI: [10.1109/ICAR46387.2019.8981628](https://doi.org/10.1109/ICAR46387.2019.8981628)
10. A. C. B Chiella\*, B. O. Teixeira, and **G. A. S. Pereira**, “State Estimation for Aerial Vehicles in Forest Environments”, in *Proceedings of the International Conference on Unmanned Aircraft Systems (ICUAS’19)*, Atlanta, June 2019, pp. 882–890. DOI: [10.1109/ICUAS.2019.8797822](https://doi.org/10.1109/ICUAS.2019.8797822)
11. A. C. B Chiella\*, B. O. Teixeira, and **G. A. S. Pereira**, “Robust Attitude Estimation Using an Adaptive Unscented Kalman Filter”, in *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA’19)*, Montreal, May 2019, pp. 7748–7754 (Acceptance rate: 44%). DOI: [10.1109/ICRA.2019.8793714](https://doi.org/10.1109/ICRA.2019.8793714)
12. **G. A. S. Pereira**, S. Choudhury, and S. Scherer, “A framework for optimal repairing of vector field-based motion plans,” in *Proceedings of the International Conference on Unmanned Aircraft Systems (ICUAS’16)*, Arlington, June 2016, pp. 405–846. DOI: [10.1109/ICUAS.2016.7502525](https://doi.org/10.1109/ICUAS.2016.7502525)
13. A. R. Araújo<sup>+</sup>, D. D. Caminhas<sup>+</sup>, and **G. A. S. Pereira**, “An architecture for navigation of service robots in human-populated office-like environments,” In *Proceedings of the 11th IFAC Symposium on Robot Control (SYROCO’15)*, Salvador, August 2015, p. 1–6. DOI: [10.1016/j.ifacol.2015.12.032](https://doi.org/10.1016/j.ifacol.2015.12.032)
14. V. M. Gonçalves, L. C. A. Pimenta, C. A. Maia, and **G. A. S. Pereira**, “Coordination of multiple fixed-wing UAVs traversing intersecting periodic paths,” in *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA’13)*, Karlsruhe, May 2013, pp. 841–846. (Acceptance rate: 39%) DOI: [10.1109/ICRA.2013.6630672](https://doi.org/10.1109/ICRA.2013.6630672)
15. G. S. C. Avellar<sup>†</sup>, G. D. Thums, R. R. Lima, P. Iscold, L. A. B. Torres, and **G. A. S. Pereira**, “On the development of a small hand-held multi-UAV platform for surveillance and monitoring,” in *Proceedings of the International Conference on Unmanned Aircraft Systems (ICUAS’13)*, Atlanta, May 2013, pp. 405–846. DOI: [10.1109/ICUAS.2013.6564715](https://doi.org/10.1109/ICUAS.2013.6564715)
16. M. M. Gonçalves<sup>†</sup>, L. C. A. Pimenta, and **G. A. S. Pereira**, “Coverage of curves in 3D with swarms of nonholonomic aerial robots,” in *Proceedings of the IFAC World Congress*, vol. 18, 2011, pp. 10 367–10 372. DOI: [10.3182/20110828-6-IT-1002.03723](https://doi.org/10.3182/20110828-6-IT-1002.03723)
17. B. C. O. Dutra<sup>+</sup>, **G. A. S. Pereira**, and F. H. Vasconcelos, “Robotic manipulators for attitude sensors calibration: the measurement model and uncertainty calculation,” in *Proceedings of the 18th Symposium IMEKO TC 4*, 2011.

18. V. M. Gonçalves<sup>+</sup>, L. C. A. Pimenta, C. A. Maia, **G. A. S. Pereira**, B. C. O. Dutra, N. Michael, J. Fink, and V. Kumar, "Circulation of curves using vector fields: actual robot experiments in 2d and 3d workspaces," in *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA'10)*, 2010, pp. 1136–1141. (Acceptance rate: 42%) DOI: [10.1109/ROBOT.2010.5509581](https://doi.org/10.1109/ROBOT.2010.5509581)
19. V. M. Gonçalves<sup>+</sup>, L. C. A. Pimenta, C. A. Maia, and **G. A. S. Pereira**, "Artificial vector fields for robot convergence and circulation of time-varying curves in n-dimensional spaces," in *Proceedings of the American Control Conference (ACC'09)*, 2009, pp. 2012–2017. (selected as one of four finalists for the **Student Best Paper Award.**) DOI: [10.1109/ACC.2009.5160350](https://doi.org/10.1109/ACC.2009.5160350)
20. M. T. P. Silva, F. H. Vasconcelos, and **G. A. S. Pereira**, "New method for locomotor activity measures in instrumented animals with implant based on inductive coupling" in *Proceedings of the XIX IMEKO World Congress*, Lisbon, Portugal, September, 2009, pp. 1724–1728.
21. L. C. A. Pimenta<sup>\*</sup>, N. Michael, **G. A. S. Pereira**, R. C. Mesquita, and V. Kumar, "Control of swarms based on hydrodynamic models," in *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA'08)*, 2008, pp. 1948–1953. (Acceptance rate: 45%) DOI: [10.1109/ROBOT.2008.4543492](https://doi.org/10.1109/ROBOT.2008.4543492)
22. M. T. P. Silva, F. H. Vasconcelos, and **G. A. S. Pereira**, "RF interface for intelligent arterial pressure sensor based in RFID technology" in *Proceedings of the 16th IMEKO TC4 Symposium*, Florence, Italy, September, 2008, pp. 66–71.
23. M. B. Soares<sup>†</sup>, M. F. M. Campos, D. A. Dutra, V. C. S. Campos, and **G. A. S. Pereira**, "Hybrid mobile robot navigational strategy for efficient data collection in sparsely deployed sensor networks," in *Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS'07)*, San Diego, CA, October 2007, pp. 2833–2838. (Acceptance rate: 52%) DOI: [10.1109/IROS.2007.4399544](https://doi.org/10.1109/IROS.2007.4399544)
24. M. A. G. Moreira<sup>+</sup>, H. N. Machado<sup>+</sup>, C. F. de Castro Mendonça<sup>\*</sup>, and **G. A. S. Pereira**, "Mobile robot outdoor localization using planar beacons and visual improved odometry," in *Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS'07)*, San Diego, CA, October 2007, pp. 2468–2473. (Acceptance rate: 52%) DOI: [10.1109/IROS.2007.4399384](https://doi.org/10.1109/IROS.2007.4399384)
25. L. C. A. Pimenta<sup>\*</sup>, **G. A. S. Pereira**, and R. C. Mesquita, "Fully continuous vector fields for mobile robot navigation on sequences of discrete triangular regions," in *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA'07)*, 2007, pp. 1992–1997. (Acceptance rate: 44%) DOI: [10.1109/ROBOT.2007.363614](https://doi.org/10.1109/ROBOT.2007.363614)
26. R. M. Resende<sup>†</sup>, **G. A. S. Pereira**, C. A. Maia, and R. L. Carceroni, "A gestural language recognition methodology for human-robot interaction," in *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA'06)*, 2006, pp. 4333–4335. (Acceptance rate: 39%) *This is a short paper that does not appear on IEEE Xplore.*
27. A. R. Fonseca<sup>†</sup>, L. C. A. Pimenta<sup>\*</sup>, R. C. Mesquita, R. R. Saldanha, and **G. A. S. Pereira**, "Path planning for mobile robots operating in outdoor environments using map overlay and triangular decomposition," in *Proceedings of the International Congress of Mechanical Engineering (COBEM'2005)*, Ouro Preto, Brasil, Novembro 2005.
28. L. C. A. Pimenta<sup>\*</sup>, A. R. Fonseca<sup>†</sup>, **G. A. S. Pereira**, R. C. Mesquita, E. J. Silva, W. M. Caminhas, and M. F. M. Campos, "On computing complex navigation functions," in *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA'05)*, Barcelona, Spain, April 2005, pp. 3463–3468. (Acceptance rate: 45%) DOI: [10.1109/ROBOT.2005.1570644](https://doi.org/10.1109/ROBOT.2005.1570644)
29. F. Zhang, V. Kumar, and **G. A. S. Pereira**, "Necessary and sufficient conditions for localization of multiple robot platforms," in *Proceedings of the ASME Design Engineering Technical Conferences (DETC'04)*, Salt Lake City, USA, September 28 – October 2 2004. (This paper was selected as one of tree finalists for the **The Best Conference Paper Award.**) DOI: [10.1115/DETC2004-57010](https://doi.org/10.1115/DETC2004-57010)
30. **G. A. S. Pereira**, M. B. Soares<sup>†</sup>, and M. F. M. Campos, "A potential field approach for collecting data from sensor networks using mobile robots," in *Proceedings of the IEEE/RJS International Conference on Intelligent Robots and Systems (IROS'04)*, Sendai, Japan, September 28 – October 2 2004. DOI: [10.1109/IROS.2004.1389953](https://doi.org/10.1109/IROS.2004.1389953)
31. **G. A. S. Pereira**, A. K. Das, V. Kumar, and M. F. M. Campos, "Formation control with configuration space constraints," in *Proceedings of the IEEE/RJS International Conference on Intelligent Robots and Systems (IROS'03)*, Las Vegas, USA, October 27–31 2003, pp. 2755–2760. DOI: [10.1109/IROS.2003.1249287](https://doi.org/10.1109/IROS.2003.1249287)
32. **G. A. S. Pereira**, V. Kumar, and M. F. M. Campos, "Localization and tracking in robot networks," in *Proceedings of the International Conference on Advanced Robotics (ICAR'03)*, 2003, pp. 465–470.
33. C. Belta, **G. A. S. Pereira**, and V. Kumar, "Control of a team of car-like robots using abstractions," in *Proceedings of the 42nd IEEE Conference on Decision and Control (CDC'03)*, 2003, pp. 1520–1525.
34. B. S. Pimentel, **G. A. S. Pereira**, and M. F. M. Campos, "On the development of cooperative behavior-based mobile manipulators," in *Proceedings of the First International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS'02)*, Bologna, Italy, July 2002, pp. 234–239. (Acceptance rate: 27%) DOI: [10.1145/544741.544799](https://doi.org/10.1145/544741.544799)



35. M. F. M. Campos, **G. A. S. Pereira**, S. R. C. Vale, A. Q. Bracarensea, G. A. Pinheiro, and M. P. Oliveira, "A mobile manipulator for installation and removal of aircraft warning spheres on aerial power transmission lines," in *Proceedings of IEEE International Conference on Robotics and Automation (ICRA'02)*, Washington, DC, May 2002, pp. 3559–3564. (Acceptance rate: 59%)DOI: [10.1109/ROBOT.2002.1014261](https://doi.org/10.1109/ROBOT.2002.1014261)
36. **G. A. S. Pereira**, B. S. Pimentel, L. Chaimowicz, and M. F. M. Campos, "Coordination of multiple mobile robots in an object carrying task using implicit communication," in *Proceedings of IEEE International Conference on Robotics and Automation (ICRA'02)*, Washington, DC, May 2002, pp. 281–286. (Acceptance rate: 59%) DOI: [10.1109/ROBOT.2002.1013374](https://doi.org/10.1109/ROBOT.2002.1013374)
37. **G. A. S. Pereira**, M. F. M. Campos, and L. A. Aguirre, "Data based dynamical model of vision observed small robots," in *Proceedings of the IEEE International Conference on Systems, Man and Cybernetics (SMC'00)*, Nashville, Tennessee, USA, October 2000, pp. 3312–3317. DOI: [10.1109/ICSMC.2000.886516](https://doi.org/10.1109/ICSMC.2000.886516)
38. **G. A. S. Pereira**, M. F. M. Campos, and L. A. Aguirre, "Improved control of visually observed robotic agents based on autoregressive model prediction," in *Proceedings of IEEE/RJS International Conference on Intelligent Robots and Systems (IROS'00)*, Takamatsu, Japan, November 2000, pp. 608–614. DOI: [10.1109/IROS.2000.894671](https://doi.org/10.1109/IROS.2000.894671)

**Peer-reviewed papers in Brazilian conferences (39)** (most of the papers are in Portuguese, a few are in English)

1. **G. A. S. Pereira**, G. D. Resende<sup>+</sup>, and V. M. Gonçalves, "Pouso de veículos aéreos utilizando campos vetoriais e visão computacional. In: Congresso Brasileiro de Automática". *Anais do XXII Congresso Brasileiro de Automática (CBA'18)*, João Pessoa, PB, September 2018. pp. 1-6.
2. H. N. Machado<sup>†</sup>, and **G. A. S. Pereira**, "Navegação de um Quadricóptero em Florestas Esparsas Utilizando Planejamento de Movimento e Sensor a Laser". *Anais do XXII Congresso Brasileiro de Automática (CBA'18)*, João Pessoa, PB, September 2018. pp. 1-6.
3. A. C. B Chiella\*, B. O. Teixeira, and **G. A. S. Pereira**, "Filtro de Kalman Unscented Adaptativo para Estimação de Atitude Representada por Quatérnios". *Anais do XXII Congresso Brasileiro de Automática (CBA'18)*, João Pessoa, PB, September 2018. pp. 1-6.
4. E. J. R. Freitas<sup>†</sup>, H. A. B. Passos<sup>+</sup>, and **G. A. S. Pereira**, "Desvio de obstáculos por robôs semiautônomos usando planejamento de caminhos" In *Anais do XIII Simpósio Brasileiro de Automação Inteligente (SBAI'17)*, Porto Alegre, RS, October 2017. pp 1043–1048.
5. **G. A. S. Pereira**, S. Choudhury, and S. Scherer, "Nonholonomic Nonholonomic motion planning in partially unknown environments using vector fields and optimal planners," in *Anais do XXI Congresso Brasileiro de Automática (CBA'16)*, Vitória, ES, October 2016.
6. D. S. Alban-Penafiel<sup>†</sup> and **G. A. S. Pereira**, "Geração de mapas para localização e navegação de um manipulador móvel usando múltiplos sensores," in *Anais do XX Congresso Brasileiro de Automática (CBA'14)*, Belo Horizonte, MG, September 2014, pp. 1–6.
7. D. A. Lima<sup>†</sup> and **G. A. S. Pereira**, "Navegação segura de um carro autônomo utilizando campos vetoriais e o método da janela dinâmica," in *Anais do X Simpósio Brasileiro de Automação Inteligente (SBAI'11)*, 2011, pp. 1167–1172.
8. L. E. R. Silva, L. A. B. Torres, and **G. A. S. Pereira**, "Calibração de acelerômetros utilizando um robô manipulador industrial," in *Anais do X Simpósio Brasileiro de Automação Inteligente (SBAI'11)*, 2011, pp. 1025–1030.
9. L. G. B. Machado, M. M. Gonçalves<sup>†</sup>, L. C. A. Pimenta, and **G. A. S. Pereira**, "Convergência e circulação de curvas por múltiplos robôs diferenciais," in *Anais do X Simpósio Brasileiro de Automação Inteligente (SBAI'11)*, 2011, pp. 563–568.
10. M. A. G. Moreira<sup>†</sup>, E. J. R. Freitas<sup>+</sup>, **G. A. S. Pereira**, L. A. B. Torres, and P. Iscold, "Modelagem e controle de um helimodelo em ambientes internos," in *Anais do XVIII Congresso Brasileiro de Automática (CBA'10)*, 2010, pp. 3218–3224.
11. M. M. Gonçalves<sup>†</sup>, L. C. A. Pimenta, and **G. A. S. Pereira**, "Formação de padrões em ambientes tridimensionais com enxames de robôs móveis aéreos utilizando campos vetoriais," in *Anais do XVIII Congresso Brasileiro de Automática (CBA'10)*, 2010, pp. 5006–5013.
12. M. M. Bosque, L. C. A. Pimenta\*, R. C. Mesquita, **G. A. S. Pereira**, and L. Chaimowicz, "Implementação do controle de enxames de robôs utilizando a hidrodinâmica de partículas suavizadas," in *Anais do XVIII Congresso Brasileiro de Automática (CBA'10)*, 2010, pp. 1832–1839.
13. V. B. Sabbagh<sup>+</sup>, E. J. R. Freitas<sup>+</sup>, G. M. M. E. Castro<sup>+</sup>, M. M. Santos<sup>†</sup>, M. F. Baleeiro<sup>+</sup>, T. M. Silva<sup>†</sup>, P. Iscold, L. A. B. Torres, and **G. A. S. Pereira**, "Desenvolvimento de um sistema de controle para um carro de passeio autônomo," in *Anais do XVIII Congresso Brasileiro de Automática (CBA'10)*, 2010, pp. 928–933.
14. D. A. Lima<sup>†</sup> and **G. A. S. Pereira**, "Um sistema de visão estéreo para navegação de um carro autônomo em ambientes com obstáculos," in *Anais do XVIII Congresso Brasileiro de Automática (CBA'10)*, 2010, pp. 224–231.



15. B. C. O. Dutra<sup>+</sup> and **G. A. S. Pereira**, “Orientation of rigid objects using a mobile robot,” in *Anais do XVIII Congresso Brasileiro de Automática (CBA’10)*, 2010, pp. 20–26.
16. M. A. G. Moreira<sup>†</sup>, **G. A. S. Pereira**, P. Iscold, and L. A. B. Torres, “Localização de um mini-helicóptero em ambientes internos usando sensores inerciais e visão estéreo,” in *Anais do Simpósio Brasileiro de Automação Inteligente*, 2009.
17. E. J. de R. Freitas<sup>+</sup>, M. N. W. Vinti<sup>+</sup>, M. M. Santos<sup>†</sup>, P. Iscold, L. A. B. Torres, and **G. A. S. Pereira**, “Desenvolvimento de automação embarcada para um robô móvel baseado em um carro de passeio,” in *Anais do Simpósio Brasileiro de Automação Inteligente*, 2009, pp. 1–6.
18. M. M. Santos<sup>†</sup>, E. J. R. Freitas<sup>+</sup>, M. N. W. Vinti<sup>+</sup>, P. Iscold, L. A. B. Torres, and **G. A. S. Pereira**, “Automation and localization of a robotic car,” in *Proceedings of the 3rd Applied Robotics and Collaborative Systems Engineering Workshop (Robocontrol’08)*, 2008.
19. **G. A. S. Pereira**, P. Iscold, and L. A. B. Torres, “Estimação da atitude de aeronaves utilizando visão computacional,” in *Anais do XVII Congresso Brasileiro de Automática (CBA’08)*, 2008.
20. **G. A. S. Pereira**, D. R. Rebelo<sup>+</sup>, P. Iscold, and L. A. B. Torres, “A vector field approach to guide small UAVs through a sequence of waypoints,” in *Anais do XVII Congresso Brasileiro de Automática (CBA’08)*, 2008.
21. V. M. Gonçalves<sup>+</sup>, C. A. Maia, and **G. A. S. Pereira**, “Navegação de robôs móveis utilizando ciclos limite determinados por meio de curvas implícitas,” in *Anais do XVII Congresso Brasileiro de Automática (CBA’08)*, 2008.
22. M. T. P. Silva, F. H. Vasconcelos, and **G. A. S. Pereira**, “Interface de rf para sensor inteligente de pressão arterial baseada em tecnologia rfid,” in *Anais do 7o Seminário Internacional de Metrologia Elétrica (VIII Semetro)*, Belo Horizonte, 2007.
23. T. T. Salis<sup>†</sup> and **G. A. S. Pereira**, “Contagem automática de tarugos de aço por meio de visão computacional,” in *Anais do XI Seminário de Automação de Processos da Associação Brasileira de Metalurgia e Materiais (ABM)*. Porto Alegre: Associação Brasileira de Metalurgia e Materiais (ABM), 2007, pp. 583–595.
24. M. A. G. Moreira<sup>+</sup>, H. N. Machado<sup>+</sup>, C. F. de Castro Mendonça<sup>†</sup>, and **G. A. S. Pereira**, “A traffic sign detector for mobile robot localization,” in *Anais do VIII Simpósio Brasileiro de Automação Inteligente (SBAI’07)*, Florianópolis, October 2007.
25. P. Iscold, G. R. C. Oliveira, A. Alves Neto, **G. A. S. Pereira**, and L. A. B. Torres, “Desenvolvimento de horizonte artificial para aviação geral baseado em sensores mems,” in *Anais V Congresso Brasileiro de Engenharia Inercial (SBEIN’07)*, Rio de Janeiro, 2007, pp. 145–150.
26. D. A. Lima<sup>+</sup>, **G. A. S. Pereira**, and F. H. Vasconcelos, “Visão computacional para leitura do dispositivo mostrador de instrumentos de medição,” in *Anais do 7o Seminário Internacional de Metrologia Elétrica (VIII Semetro)*, Belo Horizonte, 2007.
27. L. C. A. Pimenta<sup>\*</sup>, M. L. Mendes, R. C. Mesquita, and **G. A. S. Pereira**, “Uma abordagem via simulação de fluidos em campos eletrostáticos para geração de padrões por múltiplos robôs,” in *Anais do 12o Simpósio Brasileiro de Microondas e Optoeletrônica e 7o Congresso Brasileiro de Eletromagnetismo*, Belo Horizonte, MG, 2006.
28. L. C. A. Pimenta<sup>\*</sup>, J. S. Corrêa, M. B. Soares, **G. A. S. Pereira**, R. C. Mesquita, and M. F. M. Campos, “Utilização de funções harmônicas na coleta de dados em redes de sensores sem fio por robôs móveis,” in *Anais do Congresso Brasileiro de Automática (CBA’06)*, 2006, pp. 1405–1410.
29. M. A. G. Moreira<sup>+</sup> and **G. A. S. Pereira**, “Localização de robôs móveis a partir de marcos visuais mapeados em tempo real,” in *Anais do Congresso Brasileiro de Automática (CBA’06)*, 2006, pp. 399–404.
30. H. N. Machado<sup>+</sup> and **G. A. S. Pereira**, “Medição das velocidades de um robô móvel utilizando seqüências de imagens de sua superfície de movimentação,” in *Anais do Congresso Brasileiro de Automática (CBA’06)*, 2006, pp. 1025–1030.
31. M. L. Neves<sup>+</sup> and **G. A. S. Pereira**, “Localização em redes de robôs usando Álgebra intervalar,” in *Anais do VII Simpósio Brasileiro de Automação Inteligente (SBAI’05)*, São Luiz, MA, September 2005.
32. M. B. Soares<sup>\*</sup>, M. F. M. Campos, **G. A. S. Pereira**, and G. R. Mateus, “Planejamento de rotas de robôs autônomo em redes de sensores sem fio,” in *Anais do XV Congresso Brasileiro de Automática (CBA’04)*, Gramado, RS, September 2004.
33. L. C. A. Pimenta<sup>†</sup>, **G. A. S. Pereira**, R. C. Mesquita, W. M. Caminhas, and M. F. M. Campos, “Elementos finitos na navegação de robôs móveis,” in *Anais do XV Congresso Brasileiro de Automática (CBA’04)*, Gramado, RS, September 2004.
34. **G. A. S. Pereira**, F. B. Torres<sup>+</sup>, and M. F. M. Campos, “Desenvolvimento de robôs holonômicos de baixo custo para o estudo de robótica móvel,” in *Anais do XV Congresso Brasileiro de Automática (CBA’04)*, Gramado, RS, September 2004.
35. **G. A. S. Pereira**, V. Kumar, and M. F. M. Campos, “A framework for motion planning of cooperative mobile robots,” in *Anais do VI Simpósio Brasileiro de Automação Inteligente (SBAI’03)*, Bauru, SP, September 2003, pp. 846–851.
36. G. S. Santiago, **G. A. S. Pereira**, M. F. M. Campos, and L. A. Aguirre, “Partial model identification of a remotely controlled indoor blimp,” in *Anais do XIV Congresso Brasileiro de Automática (CBA’02)*, Natal, RN, Setembro 2002, pp. 2921–2926.

37. **G. A. S. Pereira**, B. S. Pimentel, and M. F. M. Campos, “A simple testbed for cooperative robotics,” in *Anais do V Simpósio Brasileiro de Automação Inteligente (SBAI'01)*, Canela, RS, November 2001.
38. **G. A. S. Pereira** and M. F. M. Campos, “Sistema robusto para estimação visual da posição de sistemas móveis a partir de marcos visuais planares,” in *Anais do V Simpósio Brasileiro de Automação Inteligente (SBAI'01)*, Canela, RS, November 2001.
39. **G. A. S. Pereira**, M. F. M. Campos, and L. A. Aguirre, “Modelo dinâmico para predição da posição e orientação micro-robôs móveis observados por visão,” in *Anais do XIII Congresso Brasileiro de Automática (CBA'00)*, Florianópolis, SC, September 2000.

### Thesis

1. **G. A. S. Pereira**, “[Motion Planning and Control of Cooperating Mobile Robots: A Graph Connectivity Approach](#)”. Doctoral Dissertation, Department of Computer Science, Federal University of Minas Gerais, November 2003.
2. **G. A. S. Pereira**, “[Identification and Control of Micro Mobile Robots](#)”. Master Thesis, Department of Electrical Engineering, Federal University of Minas Gerais, February 2000.

### Technical Report

1. **G. A. S. Pereira**, S. Choudhury, and S. Scherer, “Kinodynamic Motion Planning on Vector Fields using RRT\*”. Pittsburgh: Carnegie Mellon University (CMU), [CMU-RI-TR-16-35](#), 2016.

### Dataset

1. R. M. Gago, **G. A. S. Pereira**, M. Y. A. Pereira, “Aerial Lidar Dataset of an Indoor Stockpile Warehouse”, IEEE Dataport, 2020. DOI: [10.21227/zyxc-wq04](#).

### Patents

1. Tethering System for Localization and Landing of Drones. U.S. Patent (provisional) N° 63/512,640. Filing date: July 9, 2023.
2. Autonomous or semi-autonomous system for installation and removal of signalization spheres on aerial power transmission lines or similar. Brazilian Patent N° PI02059169, Filing date: November 2002, Approval date: January 2016.

### Other Publications

1. S. Jacobs<sup>+</sup>, R. Butts<sup>+</sup>, Y Gu, A. Baheri and **G. A. S. Pereira**, “A Framework for Controlling Multi-Robot Systems Using Bayesian Optimization and Linear Combination of Vectors”, 2022 DOI: [10.48550/arXiv.2203.12416](#).
2. E. Paiva and **G. A. S. Pereira**, “Optimal Aerial Guidance in General Wind Fields”, 2020, TechRxiv. Preprint. DOI: [10.36227/techrxiv.13172915.v1](#).

### Press Coverage and Press Releases

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- [WVU Awarded Grant from the 100K Strong Americas Innovation Fund to partner with Brazilian Higher Education Institutions](#) – WVU’s Statler College Media Hub – 2022.
- [Autonomous Drone-Based Coal Storage Safety Monitoring System](#) – Azo Robotics – 2022.
- [WVU engineers aim to improve safety with autonomous robotic inspection system for coal waste storage facilities](#) – WVU Today – 2022.
- [WVU Engineers developing military rescue drones](#) – Dominion Post (News Paper) – 2022.
- [West Virginia University engineers advance U.S. Air Force search and rescue missions in hostile territories with unmanned drones](#) – WV News, WVU Today – 2022.
- [Why a Brazilian robotics expert moved to West Virginia to work on robots](#) – Amazon Science – 2022
- [WVU engineers creating software for aerobots to explore Venus](#) – WVU Today – 2021.
- [Drone Activity at WVU’s Summer Camp](#) – Dominion Post (News Paper) – 2019
- Interview on Drone Delivery – ComCiência Magazine – 2019
- Interview on Autonomous Safety Systems – Correio Braziliense (News Paper) – 2016.
- Interview on Jobs and Robots – Zero Hora de Porto Alegre (News Paper) – 2015.
- Interview on Robotics – Portal Terra (On-line News Paper) – 2013.
- Autonomous CAR Developed at UFMG (CADU) covered by several TV networks and news papers in Brazil (TV GLOBO, SBT, TV UFMG, Jornal do Brasil, Hoje em Dia, Estado de Minas, O Tempo, Revista Encontro, Pesquisa Fapesp, Revista FAPEMIG, Radio Itatiaia) – [2009-2015]. Some videos here: <https://goo.gl/zEJkhH>

## Editorial Boards

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[Web of Science](#) indicated **123** verified editor records on 9/01/2023.

10/2020–present IEEE Robotics and Automation Letters, IEEE – [Associate Editor](#).

01/2020–07/2021 Journal of Intelligent & Robotic Systems, Springer – Lead Guest Editor.

01/2016–present Learning & Nonlinear Models – [Associate Editor](#).

01/2013–12/2018 Journal of Control, Automation and Electrical Systems, Springer – Associate Editor.

01/2010–12/2012 Revista Controle & Automação – Associate Editor.

## Organization of Scientific Events

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- International Conference on Advanced Robotics (ICAR), Belo Horizonte, MG, Brazil, December 2019 – Program Chair.
- Congresso Brasileiro de Automática (CBA), Belo Horizonte, MG, Brazil, September 2014 – Program Co-Chair.
- International Symposium on Experimental Robotics (ISER), Rio de Janeiro, RJ, Brazil, June 2006 – Local Committee.

## Program Committees of Scientific Events

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- Congresso Brasileiro de Automática (CBA), 2018.
- IEEE Latin American Robotics Symposium (LARS), 2018.
- IEEE Latin American Robotics Symposium (LARS), 2017.
- IEEE Intelligent Transportation Systems Conference (ITSC), 2017.
- Simpósio Brasileiro de Automação Inteligente (SBAI), 2017.
- IEEE Intelligent Transportation Systems Conference (ITSC), 2016.
- IEEE Latin American Robotics Symposium (LARS), 2016
- IEEE/IFIP International Workshop on Urban Mobility and Intelligent Transportation Systems (UMITS), 2016.
- Simpósio Brasileiro de Automação Inteligente (SBAI), 2015.
- IFAC Symposium on Robot Control (SYROCO), 2015.
- IEEE International Symposium on Industrial Electronics (ISIE) – Robotics & Mechatronics Track, 2015
- Simpósio Brasileiro de Automação Inteligente (SBAI), 2013.
- Congresso Brasileiro de Robótica (CBR), 2012.
- Simpósio Brasileiro de Automação Inteligente (SBAI), 2011.
- 10th International Symposium on Distributed Autonomous Robotic Systems (DARS), 2010.
- Simpósio Brasileiro de Automação Inteligente (SBAI), 2009.
- VII Seminário Internacional de Metrologia Elétrica (SEMETRO), 2007.
- Encontro de Robótica Inteligente (ENRI), 2006.

## Reviews and Panels

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[Web of Science](#) indicated **108** verified reviews on 7/10/2023.

- JOURNALS: IEEE Transactions on Aerospace and Electronic Systems, Journal of Field Robotics, IEEE Transactions on Robotics, IEEE Robotics and Automation Letters, Journal of Intelligent & Robotic Systems, Sensors, IEEE Transactions on Control of Network Systems, IEEE Sensors Journal, IEEE Transactions on Automation Science and Engineering, IEEE Transactions on Robotics and Automation, Robotica, Automática, IEEE Intelligent Systems, Robotics and Autonomous Systems, Robotica, Intelligent Service Robotics, IEEE Transactions on Instrumentation and Measurement, Pattern Analysis and Applications, Journal of the Brazilian Society of Mechanical Sciences and Engineering, Journal of Control, Automation and Electrical Systems, Revista Controle & Automação.

- CONFERENCES: IEEE International Conference on Robotics and Automation (ICRA), IEEE/RJS International Conference on Intelligent Robots and Systems (IROS), American Control Conference (ACC), International Conference on Unmanned Aircraft Systems (ICUAS), IEEE International Conference on Decision and Control (CDC), IEEE Intelligent Vehicles Symposium (IV), IEEE Intelligent Transportation Systems Conference (ITSC), AIAA Guidance Navigation and Control Conference, International Symposium on Distributed Autonomous Robotic Systems (DARS), IEEE/ASME International Conference on Advanced Intelligent Mechatronics (AIM), Congresso Brasileiro de Automática (CBA), Simpósio Brasileiro de Automação Inteligente (SBAI), Simpósio Brasileiro de Robótica (SBR).
- FUNDING AGENCIES: National Science Foundation (NSF/USA), Swiss National Science Foundation (SNSF/Swiss), National Council for Scientific and Technological Development (CNPq/Brazil), Coordination for the Improvement of Higher Education Personnel (CAPES/Brazil), Fundação de Amparo à Ciência e Tecnologia do Estado de Pernambuco (FACEPE/Brazil), Fundação de Amparo à Pesquisa do Estado de Mato Grosso (FAPEMAT/Brasil), Fundação de Amparo à Pesquisa do Estado do Piauí (FAPEPI/Brasil).

## Committee Memberships

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- COLLEGE AND UNIVERSITY COMMITTEES: Mechanical Engineering Curriculum Committee (MECC) (2023–); MAE Department's Dissertation of the Year Selection Committee (2023); WVU's Statler College Diversity, Equity, and Inclusion (DEI) Committee (2019–); WVU's Brazilian Steering Committee (2019–); Congregation of UFMG's School of Engineering (2013–2015); Graduate Program in Electrical Engineering Curriculum Committee (UFMG, 2006–2014); Control and Automation Engineering Curriculum Committee (UFMG, 2012–2017); Electrical Engineering Curriculum Committee (UFMG, 2010–2012).
- FACULTY SEARCH COMMITTEES: 3 committees at West Virginia University; 11 committees at UFMG.
- POSTDOC SEARCH COMMITTEES: 2 committees at West Virginia University.
- PHD COMMITTEES: West Virginia University (16 committees), Federal University of Minas Gerais (20 committees), University of São Paulo (5), Federal University of Rio de Janeiro (2), Federal University of Itajubá (1), Federal University of Campina Grande (1), Federal University of Rio Grande do Norte (1), Federal University of Juiz de Fora (1), University of Campinas (1), Federal University of Uberlândia (1).
- QUALIFY (DISSERTATION PROPOSAL) AND MASTERS COMMITTEES: West Virginia University (19m committees), California Polytechnic State University (1m), Federal University of Minas Gerais (27q+40m), University of São Paulo (6q+1m), Federal University of Rio de Janeiro (1q+3m), Federal University of Campina Grande (1q), Federal University of Rio Grande do Norte (1q), Pontifical Catholic University of Minas Gerais (2m), Federal Center for Technological Education of Minas Gerais (2m), University of Brasilia (1m), Federal University of Juiz de Fora (1m).
- SENIOR PROJECT COMMITTEES: 39 committees at the Federal University of Minas Gerais.

## Invited Presentations and Lectures

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- Brazilian Embassy, Washington, DC, USA – August 2023.
- Lehigh University, Bethlehem, PA, USA – June 2021.
- Universidade de São Paulo (USP), São Carlos, MG, Brazil – May 2019.
- West Virginia University (WVU), Morgantown, WV, USA – May 2018
- CORA Robotics Competition, Belo Horizonte, MG, Brazil – August 2017.
- IEEE Student Branch (UFMG), Belo Horizonte, MG, Brazil – October 2016.
- Brazilian Society for Automotive Engineering (AEA), São Paulo, SP, Brazil – May 2014.
- Universidade Federal do Amazonas (UFAM), Manaus, AM, Brazil – January 2014.
- Instituto Federal de Ciência e Tecnologia do Amazonas (IFAM), Manaus, AM, Brazil – May 2011.
- Universidade Federal de Juiz de Fora (UFJF), Juiz de Fora, MG, Brazil – June 2011.
- GRASP Laboratory, University of Pennsylvania (UPENN), Philadelphia, PA, USA – June 2009.



## Advising

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ME - Mechanical Engineering, AE - Aerospace Engineering, EE - Electrical Engineering, CA - Control and Automation Engineering, CS - Computer Science.

### POSTDOC

1. Dimas Abreu Archanjo Dutra: 2021–2022 (currently Teaching Assistant Professor at WVU).

### PH.D. STUDENTS (8)

1. Paulo Victor Galvão Simplício - ME/WVU - expected graduation date: December 2026
2. Luis Fernando Escobar Carvajal - ME/WVU - expected graduation date: December 2025
3. Rogério Rodrigues Lima - AE/WVU - Exploiting the Advantages and Overcoming the Challenges of the Cable in a Tethered Drone System, defense scheduled for November 29, 2023.
4. Bernardo Martinez Rocamora Junior - AE/WVU - Motion Planning in Artificial and Natural Vector Fields, defense scheduled for November 27, 2023.
5. Antônio Carlos Bana Chiella - EE/UFMG - [State Estimation of Aerial Vehicles Flying Near the Ground](#), 2019. (currently Systems Engineer at Loggi/Brazil)
6. Rafael Francisco do Santos - EE/UFMG - [Robot programming by demonstration using nonlinear auto-regressive models](#), 2018. (currently Associate Professor at UNIFEI/Brazil)
7. Natália Cosse Batista - EE/UFMG - [A probabilistic methodology for combining people detectors](#), 2015. (currently Associate Professor at CEFET-MG/Brazil)
8. Luciano Cunha de Araújo Pimenta - EE/UFMG (co-supervision with Renato Mesquita) - [Techniques for controlling swarms of robots](#), 2009. (currently Associate Professor at UFMG/Brazil)

### M.SC. STUDENTS (24)

1. Lauren Cash - ME/WVU - expected graduation date: May 2024.
2. Anna Puigvert i Juan - ME/WVU - [Optimal Path Planning for Aerial Robots Using Genetic Algorithm](#), 2023.
3. Jeremy Rathjen - ME/WVU - [Precise Landing of VTOL UAVs using a Tether](#), 2022
4. Kieren Samarakoon - ME/WVU (co-supervision with Jason Gross) - [UAV Path Planning and Multi-Modal Localization for Mapping in a Subterranean Environment](#), 2022
5. Al Mahmud - AE/WVU - [Development of Collision Resilient Drone for Flying in Cluttered Environment](#), 2021.
6. Danylo Shapovalov - AE/WVU - [Exploration of Unknown Environments Using a Tethered Mobile Robot](#), 2020.
7. Henrique Nunes Machado - EE/UFMG - Planning-based Obstacle Avoidance for Aerial Vehicles, 2020.
8. Elias José de Rezende Freitas - EE/UFMG - [A Strategy for Navigation of Semi-autonomous Service Robots Using Local Information and Sampling-Based Planners](#), 2017.
9. Diana Sabina Albán Penafiel - EE/UFMG - [Development of an Indoor Navigation System for a Personal Robot](#), 2014.
10. Gustavo Silva Castilho de Avellar - EE/UFMG - [Navigation of Unmanned Aerial Vehicles for Coverage of Areas with Minimization of Time](#), 2014.
11. Alexandre Moares Tannus - EE/UFMG (co-supervision with Danilo Melges) - [Control of a Wheelchair Using Visual-Evoked Potential](#), 2014.
12. Gabriel Silva Ribeiro - EE/UFMG (co-supervision with Luciano Pimenta) - [Emulation of an Inertial Measurement Unit for Hardware-In-the-Loop Testing](#), 2014.
13. Jullierme Emiliano Alves Dias - EE/UFMG - [Longitudinal Modeling and Speed Control of an Autonomous Car](#), 2013.
14. Tiago Amadeu Arruda - EE/UFMG - [Hardware and Software Architecture for Supervision and Control of an Autonomous Car](#), 2012.
15. Mateus Mariano Gonçalves - EE/UFMG - [Decentralized Control of Aerial Robot Swarms Using Vector Fields](#), 2011.
16. João Bosco Silvino Júnior - EE/UFMG - [Development of an Automated System for Capturing and Comparing Firearm Projectile Striations](#), 2010.
17. Marco Aurélio Guimarães Moreira - EE/UFMG - [Localization, Modeling and Control of an Indoors Helimodel](#), 2010.
18. Danilo Alves de Lima - EE/UFMG - [Safe Navigation of an Autonomous Car Using Vector Fields and The Dynamic Window Approach](#), 2010.

19. Michelle Mendes Santos - EE/UFMG (co-supervision with Leonardo Torres) - [Development of a Localization and Trajectory Reconstruction System for a Ground Vehicle](#), 2009.
20. Turíbio Tanus Salis - EE/UFMG - [Computer Vision Applications in the Steel Industry: Problems, Solutions, and Case Studies](#), 2008.
21. Raoni Maira Resende - CS/UFMG - [Development of a Human-Robot Interface Using Computer Vision and Discrete Event Systems](#), 2006.
22. Alexandre Ramos Fonseca - EE/UFMG (co-supervision with Renato Mesquita) - [Composition of Planar Maps and Route Planning Applied to the Navigation of Mobile Robots and Transmission Lines](#), 2006.
23. Luciano Cunha de Araújo Pimenta - EE/UFMG - [Navigation of Mobile Robots based on Laplace's Equation: A new Approach using Finite Elements](#), 2005.
24. Marcelo Borghetti Soares - CS/UFMG (co-supervision with Mario Campos) - [Data Extraction from Wireless Sensor Networks Using Mobile Robots](#), 2004.

#### UNDERGRADUATE STUDENTS (100+)

- Research Apprenticeship Program (RAP): **8 students at WVU**: Leonardo Peele (CS), Daniel Givler (ME), Alexander Flasch (ME), Ayman Seif (ME), Hunter Bontranger (ME), Kevin Legrand (ME), Kevin Bruce (CS), Erin Dodd (ME).
- Summer Undergraduate Research Experience (SURE): **1 student at WVU**: Leonardo Peele (CS)
- Research Experiences for Undergraduates (NSF/REU): **6 students**: Ibrahim Rahman (ME/University of Michigan), Stanford White (ME/University of Mississippi), Katelyn Crockett (CS/WVU), Steven Jacobs (AE/WVU), Ronald "Michael" Butts (EE/WVU), David Rubel (CS/Lawrence Technological University).
- Scientific Initiation students and laboratory interns: **6 students at WVU**: Kyle Sellers (ME), Vinicius Ferreira (AE), Douglas Binder (ME), Jeremy Rathjen (ME), Kyle Dalila (ME), Orly Kayiranga (ME); **42 students at UFMG**: Gabriel Dias Resende (CA), Artur Costa Passos (CA), Tomas Lopes de Oliveira (CA), Henrique Antônio Brum Passos (EE), Emylle Alves Leitão (CA), Gilberto Solis Borello Guimarães (EE), Arthur Ribeiro Araújo (EE), Vitor Teixeira Belico (CA), Marcus Vinicius Lucinda Durço (CA), Victor Coelho Lima (EE), Carlos Roberto Barreto Junior (CA), Daniel Durães Caminhas (System's Engineering), Breno Lopes de Freitas (CA), Mariana de Paula Assis Fonseca (CA), Marco Túlio da Silva Pires (CA), Adriano de Araújo Abreu Mourão (CA), Rômulo Madureira Rodrigues (CA), Anderson Anthony Almeida Mendonça (EE), Guilherme Modesto Miranda e Castro (ME), Érica Rodrigues Campedelli (EE), Bruno Cabral de Oliveira Dutra (EE), Marlon Wanderlich Vieira (CA), Elias José de Rezende Freitas (EE), Bruno Cabral de Oliveira Dutra (EE), Luís Paulo Carvalho de Mendonça (CA), Gustavo Sousa Amaral (EE), Matheus Nicolas Weynen Vinti (ME), Edsmar Figueiredo Roque (EE), Diego Rocha Rebelo (CA), Juliana Nogueira Vilela (CA), Gustavo Lima Santana Moreira (EE), Marco Aurélio Guimarães Moreira (EE), Henrique Nunes Machado (CA), Anderson Nunes Alves Peixoto (CA), Vinicius Mariano Gonçalves (EE), Glauber Moreira Prates (CA), Danilo Alves de Lima (CA), Tiago Martins Buccini (EE), Maxstaley Neves (Production Engineering), Fernando Roberto Belém (EE), Juliana Souza Nunes (EE), Wallace Santos Lage (EE).
- Senior thesis in Control and Automation Engineering and Electrical Engineering: **29 students at UFMG**: Arthur Ribeiro Araújo (EE), João Otávio de Lima Ruas (CA), Matheus Antunes Pacheco (CA), Gilberto Solis Borello Guimarães (EE), Esdras Vitor Silva Pinto (EE), Marcelo Duarte Trevisani (CA), Henrique Gomes Moutinho (CA), Antônio Horta Ribeiro (CA), Caio Augusto Negri Rocha (CA), Luís Paulo Carvalho de Mendonça (CA), João Henrique Rodrigues Costa (CA), Thiago Bolivar Reis de Pinho (CA), Mariana de Paula Assis Fonseca (CA), Lucas Ferreira de Melo Diniz (CA), Bruno Cabral de Oliveira Dutra (EE), Derick Henrique de Jesus Silva (CA), Frederico Saraiva Voria (CA), Diego Rocha Rebelo (CA), Elias José de Rezende Freitas (EE), Vitor Brandão Sabbagh (CA), Tiago Amadeu Arruda (CA), Gustavo Lima Santana Moreira (EE), Samuel Ribeiro da Costa Vale (EE), Henrique Nunes Machado (CA), Danilo Alves de Lima (CA), Breno Maia de Carvalho (CA), Bruno do Nascimento Teixeira (CA), Thomaz de Avelar Fonseca (CA), Marcos Antônio de Matos Laia (CS).
- High School interns: **2 students at WVU**: Kirsten Myers (Preston High School), Shu-Ruei "Eliot" Chang (Morgantown High School).
- Teaching assistants and graders: **9 students at WVU**: Cody Gillespie, Eric Swanson, Jared Short, Abednego Abdi, Samuel Shoemaker, Michael James Stephens, John Burke, Samantha Pittman, Jake Gilinsky; **2 students at UFMG**: Eduardo Ávila Vilar, Bruna Silva Queiroz.

#### Courses developed and/or taught

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#### GRADUATE LEVEL

- Robot Motion Planning (*course developed at UFMG in 2009 and at WVU in 2020*),

- Probabilistic Robotics (*course developed at UFMG in 2014*),
- Robot Kinematics I (*course developed at UFMG in 2014*),
- Robot Navigation (*course developed at UFMG in 2012*),
- Robot Navigation II - Advanced Motion Planning (*course developed at UFMG in 2016*),
- Robot Motion Planning and Control (*course developed at UFMG in 2011*),
- Image Detection and Analysis (*course developed at UFMG in 2005*),
- Data Structures and Algorithms.

#### UNDERGRADUATE LEVEL

- Principles of Engineering Design – Industrial Robotics (MAE 471 and CSEE 480/481) (*capstone course developed at WVU*)  
*Video of the project:*  
WVU Spring 2023: <https://youtu.be/kK8dSWVbGEs>,
- Mechatronics (MAE 211),  
*Videos of the final projects:*  
WVU 2019: <https://tinyurl.com/MAE211-2019>,  
WVU 2021: <https://tinyurl.com/MAE211-2021>,  
WVU 2022: <https://tinyurl.com/MAE211-2022>,
- Robotic Manipulators (MAE 413) (*course developed at WVU in 2019*),  
*Videos of the final projects:*  
UFMG (2010–2016): <https://goo.gl/G7m5x3>,  
WVU 2019: <https://youtu.be/ycTx04xaLoM>,  
WVU 2020: <https://tinyurl.com/manip2020>,  
WVU 2021: <https://tinyurl.com/manip2021>,  
WVU 2023: <https://tinyurl.com/MAE413-2023>,
- Introduction to Robotics,
- Control of Electrical Drives Laboratory,
- Electrical Machines Laboratory,
- Electric Circuits,
- Electric Circuits Laboratory,
- Control Systems,
- Digital Systems Laboratory,
- Logics.

#### EXTENSION COURSES AND OUTREACH ACTIVITIES

- A Ludic Introduction to Drone Programming (outreach developed at WVU summer camp – three hours – taught to elementary, middle, and high school students – 2019, 2022, 2023),
- Image Detection and Analysis (extension course – eight weeks – taught to professional engineers – 2017),
- A Ludic Introduction to Robotics (outreach developed at UFMG’s summer festival – four days – taught to people from 8 to 60 years old – 2009, 2010, 2011, 2015),
- Introduction to Aerial Robotics (conference tutorial – three days – 2011).

#### Research experience

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- Field and Service Robotics (mobile robots, autonomous cars, unmanned aircrafts)
- Robot Motion Planning (deterministic and stochastic planners, vector fields, optimal planners)
- Aerial robotics (fixed-wing, rotorcrafts, guidance, landing, state estimation, tethering)
- Cooperative Robotics (localization, manipulation, coordination, planning and control, swarms)
- Sensor Fusion (localization, mapping, path reconstruction, people detection)
- System Identification (modeling dynamic systems for prediction and control, programming by demonstration, imitation)
- Computer Vision (stereo vision, localization, visual servoing)

## Development experience

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**Videos** can be found at: [youtube.com/@gpereira](https://youtube.com/@gpereira)

### AUTONOMOUS VEHICLES AND ROBOTS DEVELOPED (in collaboration with students and colleagues)

- Tether-powered drone for mining - Principal Investigator - 2020–2022
- Caged drone for forestry - Principal Investigator - 2020–2021
- Robotic wheelchair - Principal Investigator - 2014–2017
- Service Mobile Robot (MARIA) - Principal Investigator - 2014–2017
- Team of fixed-wings aerial vehicles - Co-Principal Investigator - 2010–2014
- UFMG's Autonomous Car (CADU) - Principal Investigator - 2007–2014
- Autonomous Helimodel - Principal Investigator - 2009–2010
- Team of 4 cooperative holonomic mobile robots - part of PhD work - 2002
- Lego-based mobile manipulators (Manuelzão and Miguelin) - part of PhD work - 2001
- Mobile robot for installation of warning spheres in power transmission lines - Developer of electronics and control - 2000–2001
- Indoors autonomous vehicle (SUCATA) - Engineering Senior Design Project - 1998
- Team of 3 robotic soccer players (Teams UAI and MIneiROSOT) - non-curricular undergraduate activities - 1997–1998

### PARTICIPATION IN ROBOTICS COMPETITIONS

- Unmanned Aerial Vehicle (UAV) Competition @ ICUAS 2022 – 10th place.
- NASA Space Robotics Challenge 2, virtual/simulated competition on multirobot coordination for Lunar exploration and excavation, 2020/2021 – 6th place (total prize U\$45,000.00).
- MBZIRC - Abu Dhabi, 2017 (Mohamed Bin Zayed International Robotics Challenge) – Participated with the Carnegie Mellon Tartans Team in Challenge 1 (Landing on a Moving Platform).
- Robocup Brazil - Fortaleza, 2013 – Second place in Robocup@Home category.
- Robot Soccer Brazilian Cup - São Paulo, 1998; Porto Alegre, 1999 – First place in 1999.
- Robocup/FIRA - Paris, 1998 – Participation in the very small size robot soccer category.

## Funded Research Projects

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Total funding amount at WVU as PI and Co-PI since 2019: US\$2,487,313.00 (Individual budget: US\$932,704.50)

### CURRENT PROJECTS

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|-----------|--|
| 2023-2024 | <b>OrBNaV - Orbiter-assisted Balloon Navigation for Venus Exploration.</b><br>Role: Co-Investigator (30.22% of the budget)<br>Funding: National Aeronautics and Space Administration (NASA) – US\$99,967.00  |
| 2022-2024 | <b>Design Guidelines for Assessment of Pillar Stability in Underground Room &amp; Pillar Mines from Autonomous Robotic Inspections.</b><br>Role: Co-Principal Investigator (18% of the budget)<br>Funding: Alpha Foundation for the Improvement of Mine Safety and Health – US\$569,149.00 |
| 2022-2025 | <b>An Autonomous Robotic Inspection System for Coal Ash and Tailings Storage Facilities.</b><br>Role: Principal Investigator (56.4% of the budget)<br>Funding: Department of Energy (DOE) – US\$499,846.00   |
| 2022-2024 | <b>Secure Biometrics and Accurate Localization Using Tactical Assault Kits for Combat Search and Rescue.</b><br>Role: Principal Investigator (56.8% of the budget)<br>Funding: Kinnami Software Corporation/Air Force Research Lab (AFRL) SBIR – US\$329,174.00                            |

### PREVIOUS PROJECTS AT WVU

- |           |  |
|-----------|--|
| 2021-2023 | <b>Cooperative Energy-aware Navigation of Hybrid Airships in the Atmosphere of Venus.</b><br>Role: Science Principal Investigator (50% of the budget)<br>Funding: National Aeronautics and Space Administration (NASA) – US\$99,999.00 |
|-----------|--|



- 2019-2022 **Autonomous Robotic Early Warning System for Underground Stone Mining Safety.**  
 Role: Co-Principal Investigator (21.8% of the budget)  
 Funding: Alpha Foundation for the Improvement of Mine Safety and Health – US\$748,968.00
- 2020-2021 **Development of an Intelligent Farming Robot.**  
 Role: Principal Investigator (100% of the budget)  
 Funding: West Virginia University Senate – US\$11,000.00
- 2020-2021 **Parallel and cloud computing for long-term robotics.**  
 Role: Principal Investigator (100% of the budget)  
 Funding: Amazon Research Awards (ARA) – US\$84,006.00
- 2019-2020 **Tethered Drones for Long-Term Exploration Missions.**  
 Role: Principal Investigator (100% of the budget)  
 Funding: NASA WV EPSCoR – US\$10,000.00

#### PREVIOUS PROJECTS AT UFMG/BRAZIL

Average Dollar quotation 2005–2018: US\$1.00  $\approx$  R\$2.50

Most Brazilian projects do not include PIs' or students' salaries. Their budget is mostly for supplies, equipment, and travel. Overhead is 14%.

- 2016-2022 **National Institute of Science and Technology for Cooperative Autonomous Systems Applied to Security and Environment.**  
 Role: Co-Principal Investigator and Institutional Principal Investigator until 10/2018  
 Funding: National Council for Scientific and Technological Development (CNPq/Brazil) – R\$7,100,000.00
- 2016-2019 **Localization and navigation of autonomous air vehicles flying near the ground.**  
 Role: Principal Investigator until 10/2018  
 Funding: Research Foundation of the State of Minas Gerais (FAPEMIG/Brazil) – R\$60,000.00
- 2016-2019 **Robot Navigation in dynamic workspaces in the presence of uncertainties.**  
 Role: Principal Investigator until 10/2018  
 Funding: National Council for Scientific and Technological Development (CNPq/Brazil) – R\$39,600.00
- 2015-2016 **Navigation of autonomous aerial vehicles near the ground** – Project executed at Carnegie Mellon University (CMU) during a sabbatical year.  
 Role: Principal Investigator  
 Funding: National Council for Scientific and Technological Development (CNPq/Brazil) – US\$29,984.00
- 2013-2016 **Motion Planning, Coordination and Control of Cooperating Robots.**  
 Role: Principal Investigator  
 Funding: National Council for Scientific and Technological Development (CNPq/Brazil) – R\$39,600.00
- 2013-2015 **Navigation of Cooperative Robots.**  
 Role: Principal Investigator  
 Funding: Research Foundation of the State of Minas Gerais (FAPEMIG/Brazil) – R\$48,000.00
- 2010-2015 **Mini-UAVs for Coverage of Areas with Minimization of Time.**  
 Role: Co-Principal Investigator  
 Funding: Financiadora de Estudos e Projetos (FINEP/Brazil) – R\$2,000,000.00
- 2012-2014 **Physical Human-Robot Interaction Using Position, Force, and Vision.**  
 Role: Principal Investigator  
 Funding: National Council for Scientific and Technological Development (CNPq/Brazil) – R\$22,000.00
- 2011-2014 **Towards Robust Robotic Manufacturing.** Research project between the Federal University of Minas Gerais, University of Brasilia, and the Massachusetts Institute of Technology (MIT).  
 Role: Researcher  
 Funding: National Council for Scientific and Technological Development (CNPq/Brazil) – US\$57,000.00 – and MISTI Global Seed Funds – US\$30,000.00
- 2011-2013 **Navigation of Autonomous Vehicles in Outdoors Environments.**  
 Role: Principal Investigator  
 Funding: Research Foundation of the State of Minas Gerais (FAPEMIG/Brazil) – R\$48,000.00
- 2010-2012 **Navigation of Cooperative Robots.**  
 Role: Principal Investigator  
 Funding: National Council for Scientific and Technological Development (CNPq/Brazil) – R\$39,600.00

- 2009-2012 **Boundary Coverage with Teams of Robots Using Vector Fields.**  
 Role: Co-Principal Investigator  
 Funding: National Council for Scientific and Technological Development (CNPq/Brazil) – R\$30,000.00
- 2009-2011 **Navigation of Autonomous Vehicles in Outdoors Environments.**  
 Role: Principal Investigator  
 Funding: Research Foundation of the State of Minas Gerais (FAPEMIG/Brazil) – R\$48,000.00
- 2009-2011 **Development of Techniques for Kinematic and Dynamic Analysis of Vehicles.**  
 Role: Principal Investigator  
 Funding: Research Foundation of the State of Minas Gerais (FAPEMIG/Brazil) – R\$250,000.00
- 2007-2011 **Coordination and Control of Large Groups of Robots.** Research project between the Federal University of Minas Gerais and the University of Pennsylvania (UPENN).  
 Role: Researcher  
 Funding: National Council for Scientific and Technological Development (CNPq/Brazil) – US\$27,000.00 – and National Science Foundation (NSF/USA) – US\$5,000.00
- 2007-2010 **Localization and Control of Cooperative Mobile Robots.**  
 Role: Principal Investigator  
 Funding: National Council for Scientific and Technological Development (CNPq/Brazil) – R\$39,600.00
- 2007-2009 **Hardware and Software for Localization, Navigation and Control of Autonomous Vehicles in Outdoor Environments.**  
 Role: Principal Investigator  
 Funding: Research Foundation of the State of Minas Gerais (FAPEMIG/Brazil) – R\$48,000.00
- 2007-2009 **Development of Instrumentation, Navigation and Control Systems for Aircrafts.**  
 Role: Co-Principal Investigator  
 Funding: National Council for Scientific and Technological Development (CNPq/Brazil) – R\$300,000.00
- 2007-2009 **Cooperation between Aerial and Ground Robots.**  
 Role: Co-Principal Investigator  
 Funding: National Council for Scientific and Technological Development (CNPq/Brazil) – US\$25,000.00
- 2005-2006 **Sensor Fusion for Localization of Autonomous Vehicles in Outdoor Environments.**  
 Role: Principal Investigator  
 Funding: Research Foundation of the State of Minas Gerais (FAPEMIG/Brazil) – R\$48,000.00

## Funded Educational Projects

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- 2022-2023 **The Future of Mining in West Virginia and Minas Gerais: New Opportunities in Technology, Safety, and Sustainability .**  
 Main objective: Exchange of undergraduate students between WVU/U.S. and UFMG/Brazil.  
 Role: Project Coordinator along with Eduardo Sosa.  
 Funding: 100K Innovation Fund supported by the National Service of Industrial Training (SENAI/Brazil) in partnership with the Partners of America, the U.S. Department of State, and the U.S. Mission-Brazil – US\$34,249.00 (+ US\$44,566.00 cost share from WVU and UFMG )
- 2013-2018 **BRAFITEC – Computer Science and Engineering education in Brazil and France in the perspective of biosystems.**  
 Objective: Exchange of undergraduate students between UFMG/Brazil and the University of Technology of Compiègne (UTC/France).  
 Role: Local Project Coordinator.  
 Funding: Coordination for the Improvement of the Higher Level Personnel (CAPES/Brazil).
- 2005-2007 **RICEE – Robotics as the integration of knowledge in Electrical Engineering and Control and Automation Engineering .**  
 Objective: Equipping teaching laboratories.  
 Role: Project Coordinator  
 Funding: ATAN Sistemas.

## Industrial Consulting and Research Partnership

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- Kinnami Software Corporation (2022-2024) - Localization of people and drones with secure communication.

- Petrobrás (2018) - Remote inspection of offshore platforms' construction.
- IHM Engineering (2017–2018) - Consulting on Drone navigation and mapping.
- VMI Security (2014) (2018) - Consulting on x-ray image formation, detection and processing of different materials on x-rays.
- Maxtrack Vehicle Trackers (2015) - Algorithms for tracker calibration and crash detection.
- FURNAS Centrais Elétricas (2012–2014) - Computer vision for reading meters' displays.
- CEMIG (2000–2001) (2008) - A robot for installation of signaling spheres; Algorithms and data structures course.

## Languages

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PORTUGUESE	Native speaker.
ENGLISH	Advanced level.
SPANISH	Comprehends reasonably and reads well.

September 22, 2023