



CHRISTOPHER ALEXANDER AREND TATSCH

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RESEARCH INTEREST

Improve robots' ability to function in increasingly complex environment.

EDUCATION

West Virginia University <i>Doctor of Philosophy in Mechanical Engineering</i>	Morgantown, WV Degree expected 2024
West Virginia University <i>Master of Science in Mechanical Engineering</i> Thesis: Route Planning for long-term robotics missions	Morgantown, WV August 2020
Federal University of Santa Maria <i>Bachelor of Science in Electrical Engineering</i>	Santa Maria-RS, Brazil August 2017
Rochester Institute of Technology <i>Non-degree International Student</i> Brazil Scientific Mobility Program, fully funded scholarship recipient	Rochester, NY

EXPERIENCE

Internship with ROBOTIS INC Open Source Team, Seoul, South Korea
Development of robot Turtlebot 3 and its applications.

SKILLS

Software: ROS/ROS2, Gazebo, NVidia Isaac, Docker, TensorFlow, Pytorch, Open3D, OpenCV, Google OR, MATLAB, Linux, Microsoft Office, and several "CAD" software.

Computer Languages: Python, C++

Languages: Portuguese (native), English.

PUBLICATION – JOURNAL ARTICLES

Tatsch, Christopher; Ahmadi, Ahmadreza; Bottega, Fabrício; Tani, Jun; Guerra, Rodrigo S Dimitri: **an Open-Source Humanoid Robot with Compliant Joint** Journal Article Journal of Intelligent & Robotic Systems, pp. 1–10, 2017, ISSN: 0921-0296.

Martinez Rocamora Jr, B., Kilic, C., Tatsch, C., Pereira, G. A., & Gross, J. N. (2023). **Multi-robot cooperation for lunar In-Situ resource utilization.** Frontiers in Robotics and AI, 10, 1149080.

Kilic, C., Martinez, B., Tatsch, C. A., Beard, J., Strader, J., Das, S., ... & Gross, J. N. (2021). **NASA space robotics challenge 2 qualification round: an approach to autonomous lunar rover operations**. IEEE Aerospace and Electronic Systems Magazine, 36(12), 24-41.

PUBLICATION – REFEREED CONFERENCE PROCEEDINGS

Tatsch, Christopher, et al. "**Rhino: An Autonomous Robot for Mapping Underground Mine Environments**." 2023 IEEE/ASME International Conference on Advanced Intelligent Mechatronics (AIM). IEEE, 2023.

Strader, J., Nguyen, J., Tatsch, C., Du, Y., Lassak, K., Buzzo, B., ... & Gu, Y. (2019, November). **Flower interaction subsystem for a precision pollination robot**. In 2019 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) (pp. 5534-5541). IEEE.

Yerebakan, Mustafa Ozkan, Yuhao Chen, Christopher Arend Tatsch, Yu Gu, and Boyi Hu. "**Factors that Affect Acceptance of Agricultural Related Robotic or Wearable Technology by Agricultural Stakeholders: A Pilot Survey**." In 2022 IEEE 3rd International Conference on Human-Machine Systems (ICHMS), pp. 1-6. IEEE, 2022.

Ahmadi, A., Tatsch, C., Montenegro, F. J. C., Tani, J., & Guerra, R. D. S. (2016, October). **Dimitri: a low-cost compliant humanoid torso designed for cognitive robotics research**. In 2016 XIII Latin American Robotics Symposium and IV Brazilian Robotics Symposium (LARS/SBR) (pp. 67-72). IEEE.

Martins, Leandro T; Tatsch, Christopher A; Maciel, Eduardo H; Gerndt, Reinhard; Guerra, Rodrigo S **A Polyurethane-based Compliant Element for Upgrading Conventional Servos into Series Elastic Actuators Journal Article IFAC-PapersOnLine**, 48 (19), pp. 112–117, 2015, ISSN: 2405-8963, (11th IFAC Symposium on Robot Control SYROCO 2015).

Martins, L. T., Tatsch, C., Maciel, E. H., Henriques, R. V. B., Gerndt, R., & da Guerra, R. S. (2015). **Polyurethane-based modular series elastic upgrade to a robotics actuator**. In RoboCup 2015: Robot World Cup XIX 19 (pp. 347-355). Springer International Publishing.

HONORS:

- **Young Talents for Science Program** recipient (CAPES - Fundação Coordenação de Aperfeiçoamento de Pessoal de Nível Superior - Brazil)
- **Brazil Scientific Mobility Program** recipient (full scholarship grant for a year of study in the United States) - CNPQ (National Council for Scientific and Technological Development)
- 6th Place - **NASA Space Robotics Challenge Phase 2** – Team Mountaineer - Perception Leader - \$30,000 prize