Personal details and date of CV

- Orzechowski
- Grzegorz
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- 26.01.2026

Degrees

- **2020**: Title of Docent in Artificial Intelligence based on Computational Dynamics, Lappeenranta-Lahti University of Technology LUT, Finland. Tel. +358 29 446 2111
- **2012**: Ph.D. in Automation and Robotics, Faculty of Power and Aeronautical Engineering, Warsaw University of Technology, Poland
- **2007**: M.Sc. (Tech), Faculty of Power and Aeronautical Engineering, Warsaw University of Technology, Poland

Current employment

- **2024-2028**: Associate Professor (Tenure Track) in Sustainable Mechatronics, Stage III, Department of Mechanical Engineering, Lappeenranta-Lahti University of Technology LUT, Lahti, Finland

Previous work experience

- **2021-2024**: Post-doctoral Researcher, Department of Mechanical Engineering, Lappeenranta-Lahti University of Technology LUT, Lappeenranta, Finland
- **2019-2021**: Senior Developer, Mevea Oy, Lappeenranta, Finland
- **2017-2019**: Post-doctoral Researcher, Department of Mechanical Engineering, Lappeenranta-Lahti University of Technology LUT, Lappeenranta, Finland
- **2012-2017**: Assistant Professor, Faculty of Power and Aeronautical Engineering, Warsaw University of Technology, Poland
- **2016**: Visiting Researcher, Department of Mechanical Engineering, Lappeenranta University of Technology, Finland (7 months)
- **2014**: Visiting Scholar, Department of Mechanical Engineering, University of Illinois at Chicago, Chicago, Illinois, USA (6 months)
- **2007-2012**: Researcher, Faculty of Power and Aeronautical Engineering, Warsaw University of Technology, Poland

Career breaks

Not applicable.

Research funding and grants

- **2025-2027**: “Industrial AI Innovation Hub for SMEs (TEHO-AI),” Regional ERDF Council (Päijät-Häme),€210 466, principal investigator.
- **2025-2026**: “Continuum Robotic Cable Exostructure for Autonomous Heavy-Duty EV Charging,” Electric Mobility Research Center, €40 000, project manager, principal investigator.
- **2024-2028**: “Sustainable Mechatronics Professorship,” Donation by the City of Lahti and regional companies, €1 155 000, project manager, principal investigator.
- **2024-2026**: “VIIMA – Virtual Material Engineering & Fatigue Design,” Business Finland project, €1 886 778, project manager (university), PI Aki Mikkola.
- **2022-2024**: “SANTTU – To reduce stress from machine & operator,” Business Finland project, €1 006 000, project manager (department), investigator, PI Aki Mikkola.

- **2021-2024**: “AITOC – Artificial Intelligence supported Tool Chain in Manufacturing Engineering,” ITEA 3 project no. 19027, €1 080 376, investigator, PI Aki Mikkola.
- **2019-2021**: “Real-time simulator-driver design and manufacturing based on flexible systems,” Research project 845600 – RealFlex, granted by the European Commission under Marie Skłodowska-Curie Individual Fellowships, €202 681, principal investigator.
- **2017-2018**: “Virtual Coach Based on Multibody Dynamics,” Decision No. 305737, granted by the Academy of Finland,€537 809, project manager, no role in the preparation, PI Perttu Hämäläinen.
- **2013-2017**: “Flexible, Overconstrained Multibody Systems Modeling using Sequential and Parallel Methods,” Research project no. 2012/07/B/ST8/03993 granted by the Polish National Science Centre, 803 480 PLN (approx. €190 000), contractor, co-author, PI Janusz Frączek.
- **2015**: “Modeling of Composite Structures using Flexible Multibody Absolute Nodal Coordinate Formulation,” Research project granted by the Dean of The Faculty of Power and Aeronautical Engineering, 20 000 PLN (approx. €4 500), principal investigator.
- **2011-2013**: “Modeling of Flexible Multibody Systems in Absolute Nodal Coordinate Formulation,” Doctoral research project no. N N514 673340 granted by the Polish National Science Centre, 80 000 PLN (approx. €19 000), main author, contractor, PI Janusz Frączek.

Research output

- Twenty-two publications in international peer-reviewed journals. One as a single author, two as the last, and eight as the first.
- One referred book chapter.
- Twenty-two conference publications.
- Boat dynamics simulator written in Julia – github.com/gorzech/BoatDynamics.jl
- Monte Carlo Tree Seach method implementation in Julia – github.com/gorzech/PureMCTS.jl
- Environments for Monte Carlo Tree Search method – github.com/gorzech/Environments.jl

Research supervision and leadership experience

- **2024-present**: Head of the Sustainable Mechatronics Laboratory within the Department of Mechanical Engineering, LUT University, Lahti
  - Establishing the first Mechanical Engineering research unit at LUT Lahti.
- **2023-2026**: Leadership in the VIIMA project:
  - Project leader at LUT. Managed and coordinated the work of five research groups at two universities (LUT, Oulu).
  - Instructing three post-doctoral researchers and two doctoral students.
- **2023-2026**: Research advisor on “Autonomous Heavy Machinery Innovation Environment” Project, Savonia University of Applied Sciences.
- **2021-present**: Co-supervision of six doctoral theses (ongoing).
- **2021-2023**: Research group leader at LUT in the SANTTU project. Managed and coordinated the work of five research groups at three Finnish universities (LUT, Aalto, Oulu).
- **2014-2026**: Supervision of ten bachelor’s and seven master’s theses.

Teaching merits

- **2026**: “Workshop on machine learning in multibody systems,” during the international IMSD Multibody conference, Seville, Spain
- **2026-present**: Post-graduate practical course on “Project Course in Mechatronics,” LUT University
- **2025**: “Workshop on machine learning in multibody systems,” during the international ECCOMAS Multibody conference, Austria, Innsbruck

- **2025-present**: Post-graduate course on “Advanced Industrial Mechatronics,” LUT University
- **2024-present**: Head of Master’s Programme in Mechatronics, LUT University, Lahti
- **2024**: Training on “University Pedagogy, Basic Module, 10 ECTS,” LUT University Pedagogy
- **2017-2024**: Post-graduate and doctoral course on “Computer methods in mechanics,” LUT University
- **2022-2026**: Workshops on Artificial Intelligence in Mechanical Engineering during the course “Simulation of a Mechatronic Machines,” LUT University.
- **2018**: Training on “Supervision of doctoral thesis and dissertation,” LUT University Pedagogy
- **2008-2017**: Lecturer and tutor on various faculty courses at Warsaw University of Technology (including automation, robotics, statistics, artificial intelligence, and mechanics)

Awards and honours

- **2016**: 1st-degree team award for scientific achievements, Rector of Warsaw University of Technology (60% participation in the work). Received jointly with J. Frączek and P. Malczyk.
- **2014**: 3rd degree individual award of the Rector of the Warsaw University of Technology for scientific achievements.

Other key academic merits

- **2025**: Invited Seminar for Doctoral Students: **AI in Mechanical Engineering**, October, University of Seville, Seville, Spain
- **2025**: Member of Doctoral Dissertation Defense Committee, thesis of **Narges Mohammadi**, supervision of **Prof. José Escalona**, 22 July, University of Seville, Seville, Spain
- **2025**: Visiting Professor, Intensive Course: “Multibody Dynamics & Machine Learning in Julia,” Warsaw University of Technology, Warsaw, Poland
- **2025**: Opponent in Doctoral Dissertation Defense, thesis of **Gustav Sten**, supervision of **Prof. Lei Feng**, 20 May, KTH Royal Institute of Technology, Stockholm, Sweden
- **2024-present**: Associate Editor in the ASMEJournal of Computational and Nonlinear Dynamics
- **2024**: Guest Editor of the Special Issue on “Data-Driven Methods for Multibody System Dynamics” in the journal of Mechanics Based Design of Structures and Machines
- **2024**: Co-chair of the 20th International Conference on Multibody Systems, Nonlinear Dynamics, and Control (ASME IDETC-CIE)
- **2023**: Invited lecture “Towards the robotic construction site,” SimTech 2023 Conference, Stuttgart, Germany
- **2023-2024**: Guest Editor of the Special Issue on “Artificial Intelligence within Multibody System Dynamics” in the journal ofMultibody System Dynamics.
- **2023**: Guest Editor of the Special Issue for the best papers from the 19th International Conference on Multibody Systems, Nonlinear Dynamics, and Control in the ASMEJournal of Computational and Nonlinear Dynamics.
- **2023**: Co-chair of the 19th International Conference on Multibody Systems, Nonlinear Dynamics, and Control (ASME IDETC-CIE).
- **2023**: Evaluator of the Student Paper Competition on 19th International Conference on Multibody Systems, Nonlinear Dynamics, and Control (ASME IDETC-CIE).
- **2023**: Member of the Doctoral Examination Committee for Mahmoud Elbakly (thesis under the supervision of Prof. Ahmed Shabana), University of Illinois at Chicago.
- **2022-present**: Member of the ASME Technical Committee on Multibody Systems and Nonlinear Dynamics.
- **2022-present**: Preparatory Committee Member of the International Society of Mechanical System Dynamics.
- **2022-present**: Member of the Young Scientists Editorial Board of the International Journal of

Mechanical System Dynamics.
- **2019**: Co-organizer of the Symposium on Flexible Multibody Dynamics within the ASME International Conference on Multibody Systems, Nonlinear Dynamics, and Control.
- **2015-present**: Active reviewer for numerous international journals.
- **2009**: Co-organizer of the ECCOMAS Thematic Conference on Multibody Dynamics, Warsaw, Poland.

Scientific and societal impact

Not applicable.

Other

Not applicable.