Jonas Wagner

Curriculum Vitae

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Education

Since Fall 2020 — **The University of Texas at Dallas**
PhD Mechanical Engineering (M.S completed in 2023)
Concentration: Dynamic Systems and Controls
Overall GPA: 3.55

Fall 2016 - Spring 2020 — **University of Wisconsin-Platteville**
B.S. Engineering Physics and B.S. Electrical Engineering
Emphasis: Control Systems, Minor: Mathematics
Overall GPA: 3.37

Teaching Experience

Fall 2024 — **Course Instructor - Systems and Controls Lab**
Mechanical Engineering, The University of Texas at Dallas
- Instructed a senior-level systems and controls course with 128 students
- Held weekly lecture sessions preparing students for the labs
- Updated the course assignments and lab procedures to improve students learning outcomes
- Managed the 5 labs sections with the help of 2 TAs

Spring 2023 - Present — **Team Mentor - Comet Aerobics**
AIAA UTD, The University of Texas at Dallas
- Mentored the technical and administrative teams for the NASA Lunarbotics competition
- Primarily provided guidance on theory and design for the electical and controls sub-teams

Fall 2023 — **Teaching Assistant - Systems and Controls**
Mechanical Engineering, The University of Texas at Dallas
Professor: Dr. Yaoyu Li
- Managed weekly assignments and held bi-weekly recitation sessions
- Developed and managed an optional design-related final project
- Prepared and lectured the pre-exam in-class review sessions

Spring 2023 - Present — **Engineering Mentor - UTDesign EPICS**
Jonsson School of ECS, The University of Texas at Dallas
- Mentored multiple five-person teams of undergraduate students
- Assisted nonprofit sponsors in defining the project requirements
- Aided students on technical aspects of their projects

Fall 2020 - Spring 2022 — **Teaching Assistant - Introduction to Mechanical Engineering I & II**
Mechanical Engineering, The University of Texas at Dallas
Professors: Dr. Oziel Rios and Dr. Dani Fadda
- TA for 4 sections totaling more than 200 students
- Instructed students in person on weekly labs and assignments
- Graded weekly deliverable and answered any grading related questions
- Collected and aggregated assignments for ABET Accreditation
- Communicated with students via email and MS Teams to answer course-related questions

Fall 2019 - Spring 2020 **Lab Assistant - Intro to Engineering Projects/Intro to Automatic Controls**
Electrical and Computer Engineering, University of Wisconsin-Platteville
Professor: Dr. Mehdi Roopaei
- Supervised and insisted in instruction for lab courses
- Assisted in teaching first year undergraduate students through the Electrical Engineering Module
- Transitioned DC-motor control labs into virtual Simulink-based lab for use during COVID

Summer 2019 **Student Assistant - Online Course Development**
Center for Distance Learning, University of Wisconsin-Platteville
Professor: Dr. Mehdi Roopaei
Assisted in the development of course materials for the online graduate course:
Engineering 7310 - Control Systems Engineering I

Fall 2016 - Spring 2020 **Robot Design and Controls Mentor**
FIRST Robotics Competition Team 171, Platteville,WI
- Mentored High School students to design, built, and control robots for competition
- Teach fundamental math and physics concepts while inspiring students to pursue STEM careers
- Facilitate the logistics of traveling for competition and outreach events
- Restructured the club administration to allow expansion of the organization to additional STEM programs throughout the area K-12 education system

Relevant Coursework

2022-2023 Real Analysis · Optimal Control and Dynamic Programming · Model Predictive Control
Spring 2022 Robust Control Systems · Multi-Agent Robotic Systems · Elementary Analysis II
Fall 2021 Engineering Optimization · Elementary Analysis I
Spring 2021 Nonlinear Systems · Convex Optimization · Dynamics of Complex Networks and Systems
Fall 2020 Linear Systems · Optimal Estimation & Kalman Filters · Probability & Random Variables
Spring 2020 Digital Signal Processing · Measurements and Instrumentation · Senior Design
Fall 2019 Discrete Time Controls · Electric and Magnetic Fields
Spring 2019 Modern Control Systems · Engineering Physics Sensors Lab · Analog Electronics
Fall 2018 Automatic Controls · Logic and Digital Design · Applied Mechanics
Spring 2018 Signals and Systems · Engineering Computation · Applied Optics

Awards

2022-Present UTD Jonsson School - Dean's Teaching Fellowship
Spring 2022 UTD Jonsson School - Best Teaching Assistant in Mechanical Engineering
Spring 2021 UTD Mechanical Engineering - Outstanding Contributions to Undergraduate Education
2019 Undergraduate Research, Scholastic and Creative Activity (URSCA) Scholarship
Spring 2019 UW Platteville Prototype Hackathon - 3rd Place
Spring 2019 Foxconn Smart Cities Smart Futures Competition - Winner (Round 1 & 2)
Honorable Mention (Round 3)

Publications

J. Wagner, T. Kogel, and J. Ruths (2023). "Set-Based Anomaly Detector and Stealthy Attack Impact Using Constrained Zonotopes". In: *2023 62nd IEEE Conference on Decision and Control (CDC).*

J. Wagner and M. Roopaei (2020). "Edge Based Decision Making in Disaster Response Systems". In: *IEEE - 10th Annual Computing and Communications Workshop and Conference*.

A. Fowler, E. Mutschelknaus, M. Roopaei, and **J. Wagner** (2019). "Learning in The Virtual Realm: A Platform for Immersive Engineering Education". In: *International Journal of Advances in Electronics and Computer Science (IJAECS)*.