Jonathan A Diller

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Interests and Goals

My research interests are in autonomy and planning in multi-robot systems with a focus in path planning for UAV swarms. I also have a general interest in Artificial Intelligence and Math Programming. My career goal is to continue conducting research in the field of robotics and automation.

Education

Colorado School of Mines **Golden, CO**
Doctor of Philosophy in Robotics (In Progress) *Expected Graduation*: **2025**

Colorado School of Mines **Golden, CO**
Master of Science in Computer Science **May 2022**

- GPA: *4.0/4.0*

Pennsylvania State University, Harrisburg **Middletown, PA**
Bachelor of Science in Computer Science **May 2020**

- Minor in Mechatronics Technology
- Minor in Mathematics
- Graduated summa cum laude
- GPA: *3.99/4.0*

Research Experience

Research Assistant *(Under Dr. Qi Han)* **July 2020 - Present**
Pervasive Computing Systems Group, Colorado School of Mines *Golden, CO*

- Studying and implementing multi-drone projects with focus on communication constraints.

Research Scholar *(Mentor: Dr. Peter Idowu)* **June 2019 - July 2019**
Penn State Drawdown REU Program *Middletown, PA*

- Designed and evaluated algorithms for controlling microgrids with PLCs.

Research Assistant *(Under Dr. Javad Khazaei)* **March 2019 - June 2019**
Pennsylvania State University *Middletown, PA*

- Researched and developed microcontroller applications for use in renewable energy projects.

Teaching Experience

Teaching Assistant **August 2020 – Present**
Colorado School of Mines *Golden, CO*

- CSCI 565: Distributed Systems (Fall 2022)
- CSCI 406: Algorithms (Spr 2021)
- CSCI 261: Programming Concepts (Fall 2020)

Peer Tutor **August 2017 – May 2020**

Pennsylvania State University *Middletown, PA*

- Tutor students in Computer Science, Mathematics, Physics and Engineering classes.
- Earned CRLA Certified Tutor, Level I Certification.

Publications

2022 **J. Diller**, P. Hall, C. Schanker, K. Ung, P. Belous, P. Russell, and Q. Han. "ICCSwarm: A Framework for Integrated Communication and Control in UAV Swarms." In Proceedings of the Eighth Workshop on Micro Aerial Vehicle Networks, Systems, and Applications, pp. 1-6. 2022

2020 **J. Diller**, P. Idowu, J. Khazaei, "Load-Leveling Trainer for Demand Side Management on a 45kW Cyber-Physical Microgrid," *Texas Power and Energy Conference 2020 (TPEC)*, College Station, Texas, Feb. 2020

2020 **J. Diller**, B. Trussell, J. Khazaei, P. Idowu, "Hardware Development of a Three-Phase 3.5 kW SiC Converter with Sinusoidal PWM," *Texas Power and Energy Conference 2020 (TPEC)*, College Station, Texas, Feb. 2020

Work Experience

Robert Bosch GmbH **May 2018 – July 2020**

Embedded Software Developer & Test Intern *Lancaster, PA*

- Develop firmware for embedded real-time environments.
- New product prototyping.
- Design and implement automated tests for moving cameras.
- Write documentation for internal procedures.

United States Marine Corps **November 2010 - November 2015**

KC-130J Crewmaster, Plane Captain *San Diego, CA & Okinawa, Japan*

- Last held rank/pay grade: Sergeant/E-5
- Supervised small teams in pre and post flight inspections on C-130J aircraft.
- Completed Aircraft Plane Captain training through personal initiative.

Technical Skills

- Programming Languages: C/C++, Python, Java, Matlab, Scheme
- Real-Time and Embedded Software Development
- Software Development in Windows and Linux Environments

Awards

- Graduation Student Marshal for School of Sci., Eng. and Tech. **May, 2020**
- Computer Science Outstanding Student, *Pennsylvania State University* **April, 2020**

- Evan Pugh Scholar Award - Senior, *Pennsylvania State University* **April, 2019**
- Evan Pugh Scholar Award - Junior, *Pennsylvania State University* **April, 2018**
- President's Freshman Award, *Pennsylvania State University* **April, 2017**
- Dean's List, *Pennsylvania State University* **Spring 2016 - Spring 2020**