

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 task and mission planning for drone 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
<i>Doctor of Philosophy in Robotics (In Progress)</i>	<i>Expected Graduation: 2025</i>

Colorado School of Mines	Golden, CO
<i>Master of Science in Computer Science</i>	May 2022
<ul style="list-style-type: none">• GPA: 4.0/4.0	

Pennsylvania State University, Harrisburg	Middletown, PA
<i>Bachelor of Science in Computer Science</i>	May 2020
<ul style="list-style-type: none">• Minor in Mechatronics Technology• Minor in Mathematics• Graduated summa cum laude• GPA: 3.99/4.0	

Research Experience

Research Assistant (<i>Under Dr. Qi Han</i>)	July 2020 - Present
<i>Pervasive Computing Systems Group, Colorado School of Mines</i>	<i>Golden, CO</i>
<ul style="list-style-type: none">• Studying and implementing multi-drone projects with focus on communication constraints.	

Research Scholar (<i>Mentor: Dr. Peter Idowu</i>)	June 2019 - July 2019
<i>Penn State Drawdown REU Program</i>	<i>Middletown, PA</i>
<ul style="list-style-type: none">• Designed and evaluated algorithms for controlling microgrids with PLCs.	

Research Assistant (<i>Under Dr. Javad Khazaei</i>)	March 2019 - June 2019
<i>Pennsylvania State University</i>	<i>Middletown, PA</i>
<ul style="list-style-type: none">• Researched and developed microcontroller applications for use in renewable energy projects.	

Teaching Experience

Teaching Assistant	August 2020 – Present
<i>Colorado School of Mines</i>	<i>Golden, CO</i>
<ul style="list-style-type: none">• 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

- 2023** **J. Diller**, P. Hall, and Q. Han. "*Energy-aware UAV Path Planning with Adaptive Speed.*" Accepted for publication at the 22nd International Conference on Autonomous Agents and Multiagent Systems (AAMAS), 2023
- 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**