

# Jonathan A Diller

Lakewood, CO 80228 | [Jonathan.A.Diller@gmail.com](mailto:Jonathan.A.Diller@gmail.com) | Updated: Oct. 2023

## Interests and Goals

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My research is in planning and tasking for multi-robot teams and autonomous agents. A common theme in my work is incorporating realistic models of the world into planning algorithms. 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

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**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

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

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

**Graduate Research Associate (Mentor: Dr. John Rogers)** **May 2023 - August 2023**  
*Army Research Laboratory* *Adelphi, MD*

- Research on the topics of task allocation and communication mapping for robot teams.

**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

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**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

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- 2023** J. Diller, P. Hall, Q. Han. "*Holistic path planning for multi-drone data collection.*" In Proceedings of the 19th International Conference on Distributed Computing in Smart Systems and the Internet of Things (DCOSS-IoT), 2023
- 2023** J. Diller, N. Dantam, J. Rogers, Q. Han. "*Communication Jamming-Aware Robot Path Adaptation.*" In Proceedings of the 19th International Conference on Distributed Computing in Smart Systems and the Internet of Things (DCOSS-IoT), 2023
- 2023** P. Hall, J. Diller, A. Moon, Q. Han. "*DroNS-3: Framework for Realistic Drone and Networking Simulators.*" In Proceedings of the Ninth Workshop on Micro Aerial Vehicle Networks, Systems, and Applications (DroNet), 2023
- 2023** J. Diller and Q. Han. "*Energy-aware UAV Path Planning with Adaptive Speed.*" In Proceedings of 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 (DroNet), 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), 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), 2020

## Work Experience

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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.

## **Technical Skills**

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- Programming Languages: C/C++, Python, Java, Matlab, Scheme
- Real-Time and Embedded Software Development
- ROS/ROS2
- Gurobi and CPLEX Optimizers
- Software Development in Windows and Linux Environments

## **Awards**

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| • Best PhD Poster, C-MAPP, <i>Colorado School of Mines</i>                   | <b>Jan, 2023</b>                 |
| • Best Elevator Pitch, C-MAPP, <i>Colorado School of Mines</i>               | <b>Feb, 2022</b>                 |
| • Graduation Student Marshal for School of Sci., Eng. and Tech.              | <b>May, 2020</b>                 |
| • Computer Science Outstanding Student, <i>Pennsylvania State University</i> | <b>Apr, 2020</b>                 |
| • Evan Pugh Scholar Award - Senior, <i>Pennsylvania State University</i>     | <b>Apr, 2019</b>                 |
| • Evan Pugh Scholar Award - Junior, <i>Pennsylvania State University</i>     | <b>Apr, 2018</b>                 |
| • President's Freshman Award, <i>Pennsylvania State University</i>           | <b>Apr, 2017</b>                 |
| • Dean's List, <i>Pennsylvania State University</i>                          | <b>Spring 2016 - Spring 2020</b> |