Mohammad Ahmad Khan

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Education

The University of Texas at Dallas **August 2022 – May 2026**

B.S. Mathematics, Neuroscience; Computer Science *GPA: 3.935/4*

Dean's List: Spring 2023

Coursework: Honors Organic Chemistry, Abstract Algebra, Probability, Computer Science I

Experience

Naval Surface Warfare Center Crane **June 2023 – August 2023**

Software Engineering Intern *Crane, IN*

- Participated in in-person summer X-Force fellowship experience
- Developed virtualized autonomous drone development workflow to increase development efficiency by 60%
- Developed rudimentary autonomous navigation algorithms for quadcopters
- Implemented IR beacon precision landing system to increase autonomous capabilities by 30% and enable safe landings in non-traditional environments
- Worked with Ardupilot, MAVROS, Gazebo, I2C, and CAD software

Naval Surface Warfare Center Crane **June 2022 – July 2022**

Software Engineering Intern *Crane, IN*

- Worked on adapting an NVIDIA Xavier module as a companion computer for autonomous drone navigation
- Utilized SOLIDWORKS to modify existing designs and create new parts to mount a computer and sensors onto an existing quadcopter to develop autonomous capabilities
- Worked with MAVROS, MAVLink, and APMPlanner 2.0 to develop autonomous navigation for the quadcopter
- Continued work on the Jackal UGV project from the previous summer (see *sub.*)

Naval Surface Warfare Center Crane **June 2021 – July 2021**

Software Engineering Intern *Crane, IN*

- Worked with Jackal UGV ground robots to autonomously defuse simulated IEDs
- Used ROS, Python, and OpenCV for computer vision and autonomous navigation routing
- Won the Director's Cup, i.e. the final competition at the end of the internship

Projects

Personal Website | *HTML, CSS, JavaScript, Github Pages* λ.fyi **January – April 2022**

- Created a custom website with animations, written from scratch in HTML, CSS, and JS, with graphics by myself
- Wrote a blog functionality with a comment system, also from scratch

Research

Drone Combat Lab, University of Texas at Dallas **August 2023 – Present**

Researcher *Dallas, TX*

- Developing drone combat simulator in Python using the Pybullet library
- Researching and developing emerging drone combat strategies
- Implemented a simulated LiDAR sensor using ray casting, and simplified data structures and calls to speed up simulation

Furche Research Group, University of California at Irvine **August 2021 – December 2022**

Intern *Irvine, CA*

- Researched Kasha's rule in non-adiabatic molecular dynamics by simulating and analyzing molecular motion and interaction
- Worked with Linux systems and bash scripts to perform calculations and analyses on UCI computer banks

Technical Skills

Languages/Database: C++, Python, ROS
Web Technologies: HTML, CSS
Software & Tools: Ubuntu, Office Suite, GitHub, Docker, Kanban