Mohammad Khan

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Education

University of Texas at Dallas   Aug 2022 - May 2026

Bachelor of Science in Mathematics (Statistics Specialization, Computer Science Minor)   GPA: 3.83/4.00
Bachelor of Science in Neuroscience (Medical Track)

Work Experience

X-Force Fellow   *June 2023 - Aug 2023*

Naval Surface Warfare Center - Crane Division

- Participated in in-person, goal-oriented 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 enable safe landings in non-traditional environments
- Worked with Ardupilot, MAVROS, Gazebo, I2C, and CAD technologies
- Previously participated in this project in Summer 2022 and Summer 2021, working on ground-based autonomous robots and robotic arms for simulated IED-defusing task.

Projects

MATE ROV Submarine Control| *ROS 2, Python*   *Aug 2023 - May 2024*

- Developed control scheme for marine remotely operated vehicle (ROV) from scratch using ROS2, Python, and Docker
- Implemented basic PID control scheme for holding ROV depth at setpoints
- Worked on creating networking to communicate video feeds and robot commands between user interface and ROV

Research

Soft Actuator Control | *Humanoid, Biorobotics and Smart Systems Lab, UT Dallas*   *Jan 2024 - May 2024*

- Performed literature search and review in the field of soft and biomimetic robotics, especially in marine environments
- Implemented PID control of a soft TPU wire-actuated effector using Arduino and Matlab

Unsupervised Behavior Clustering | *Neurobiology of Basal Ganglia Function and*   *Feb 2024 - Present*
Dysfunction Lab, UT Dallas

- Utilized Matlab and Python to perform unsupervised clustering on wireless accelerometer data to automatically identify behavioral syllables in mouse behavior experiments, in the context of degenerative brain disease models
- Developed and constructed a 3D arena to observe and analyze naturalistic mouse behavior across several modalities
- Presented an award-winning poster at the Summer Platform for Undergraduate Research (SPUR) Symposium in July 2024.

Activities

Robosub   *Aug 2023 - Present*
MATE ROV Programming Lead

- Took over leadership following the absence of initial programming lead, coordinating with other team leads to produce a finished and competition-ready submarine remotely operated vehicle (ROV)
- Helped coordinate project goals and timelines, in addition to planning and coordinating several test launches
- Led nascent team to 3rd place finish in first appearance at MATEROV World Championships 2024

UT Dallas Rugby   *Aug 2022 - Present*
Vice President

- Directed club activities and practices as vice president
- Coordinated logistics with UTD Club Sports administration to host several games on campus as well as travel to several away games
- Managed a team of 20-30 people and worked with other team administrative members.

Makkah Medical Clinic   *Aug 2023 - Present*
Administrative Volunteer

- Coordinated teams of volunteer medical assistants and healthcare providers to host a free clinic on weekends at a mosque
- Called in prescriptions, made sure supplies were stocked, facilitated appointments, patient questions, and follow-up consultations

Technical Skills

Languages: C++, Python, MATLAB, ROS, HTML, CSS
Developer Tools: Linux, Git, VS Code, Anaconda