Mahd Malik

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EDUCATION

Bachelors + Masters of Science in Computer Science *Expected May 2027*
The University of Texas at Dallas, Richardson, TX
GPA: 3.926
Dean's List: Fall 2023, Spring 2024, Spring 2025
Coursework: Linear Algebra, Data Structures, Computer Architecture, System Programming, Operating Systems, Machine Learning, Computer Networks, Calculus 1 + 2, Digital Logic, Physics (Mechanics + Electrostatics).

SKILLS

- *Programming Languages:* C#, JavaScript, Python, C++, Java, C, Typescript, Prolog, s(CASP).
- *Softwares:* .NET, Linux, Firestore, MongoDB, Unity, Next.js + React.js, Vue.js, Express.js, Flask, Arduino, ESP-IDF, Raspberry Pi, PyTorch
- *Misc. Skills:* Monte Carlo Simulations, Soldering, Multiprocessing, RAG, OOP, LLM Wrappers, Socket Programming
- *Certifications:* EMT-B, PHTLS
- *Hackathons:* Attended 5 hackathons. **Won 1st place at HackReason 2025** with project Autis(CASP) - an Autism screening AI chatbot using an s(CASP) logic engine and backed by research from the DSM-5.

EXPERIENCE

AIAA (American Institute of Aeronautics and Astronautics) Club *Sep 2023 – Present*
- Simulated L3 rocket trajectories using RocketPy with Monte Carlo methods and cumulative distributions to evaluate apogee probability and optimize design. Accelerated runtime by **n×** using multiprocessing across CPU cores.
- **Wrote and presented a paper at AIAA Regional Conference IV 2025** on optimizing rocket design via Monte Carlo–based trajectory simulations.

360° Video Prediction Research *Aug 2025 – Present*
- Collaborating with professor to create ML models, which would predict viewer gaze in 360° videos to reduce bandwidth by fetching relevant regions.
- Built frame-tiling code and a pipeline to extract audio, visual, and motion saliency features.
- Integrating multimodal saliency data via CNNs to generate gaze likelihood maps.

TEAM PROJECTS

ChessBots *Nov 2024 – Present*
- Developing web-controlled robots that play chess in real time.
- Implemented website dark mode, robot–server handshake communication, and light-sensor alignment algorithms for centering and edge detection.

Soccer Robots *Jan 2025 – May 2025*
- Developed web-controlled soccer robots powered by Raspberry Pi, enabling real-time user control through online input.
- Programmed motor control using PWM with smooth acceleration/deceleration and automated connection handling for match start and end.

EcoTrack *Feb 2025 – May 2025*
- Developed a tool that collects household data and applies ML models to predict annual energy usage.
- Implemented a RAG model for energy-saving advice, simulated IoT device data with multiprocessing, integrated Firebase for user storage, and used Google's Solar API to estimate solar cost savings.

Keep It Cool *Sep 2024*
- Submitted to SGDA Fall 2024 Game Jam. Designed and developed a Unity platformer where players control an ice cube whose temperature affects size, speed, and durability across 11 levels.