Arpan Kumar

arpsku17@gmail.com | 972.961.6103 | College Station, TX

EDUCATION

TEXAS A&M UNIVERSITY
BS in Computer Science and Statistics
Undergraduate Junior Graduating Spring 2025
GPA: 3.93 / 4.0
• Craig and Galen Brown Honors College of Engineering
• Recipient of the President's Endowed Scholarship
• Accepted into fast-track masters in Computer Science program

COURSEWORK

UNDERGRADUATE
Data Structures & Algorithms
Software Engineering
Computer Architecture
Machine Learning
Artificial Intelligence
Statistics for Data Science
Introductory Operating Systems
Database Systems

GRADUATE
Deep Learning
Design & Analysis of Algorithms

SKILLS

LANGUAGES
• C++ • Java • Python

FRAMEWORKS
• Machine Learning (TensorFlow) • Cloud Computing (AWS) • Computer Vision (OpenCV) • Linux OS

AWARDS

• MIT Grand Prix Semifinalist • FIRST Robotics Texas State Cup Alliance Finalist • FIRST Robotics World Championship Qualifying team • 1st Place 100m Breaststroke at Aaron Cole Scholarship Invitational

INTERESTS

Weightlifting, Spikeball, Sand Volleyball, Robotics

EXPERIENCE

HEWLETT PACKARD ENTERPRISE | SWE Intern
May 2023 - August 2023 | Austin, TX
- Moderated systems supporting HPE's Greenlake product for their cloud server management service
- Created developer environments to simulate iLO server failures
- Wrote queries for error logs generated by internal docker services distributed by **Kafka** using Falcon-Logscale/Humio (**Splunk** alternative)
- Created dashboards for various metrics regarding server performance using **Grafana** and **Prometheus**

TEXAS A&M UNIVERSITY | Teaching Assistant
January 2023 - Present | College Station, TX
- Instruct four class sections per week of over 400 students and teach data structures and algorithms
- Hold office hours to answer student questions and aid them in debugging programming assignments
- Make programming assignments, write automated test cases, and grade homework and exams

MIT LINCOLN LABORATORIES | Software Research Intern
July 2021 – August 2021 | Lexington, MA
- Worked on autonomous driver-less vehicle technology through the use of advanced sensor fusion through machine learning
- Incorporated experimental machine learning algorithms using Google's **TensorFlow** Library to interpret **LiDAR** sensor data
- Designed and implemented event-based code to create a diverse algorithm allowing autonomous movement in unknown landscapes through computer vision input

PROJECTS

AIMBOT | Autonomous Air Hockey Playing Robot
- Currently designing an autonomous robot to play air hockey in real-time using computer vision
- Independently completing end-to-end project including project scope and game analysis, design and construction, hardware testing and integration, data acquisition, algorithm development, and testing
- Utilized matrix operations to perform perspective changes to normalize frames to aid in processing
- Used OpenCV computer vision to determine puck's location and use regression and modular arithmetic methods to track puck's trajectory and predict its final location
- Experimented with **TensorFlow** machine learning model to be able to better predict puck's final position and generalize it's movement
- Designed a unique method to compute the optimal hitting angle for any given point using vector fields with minimal computational complexity
- Integrated Python code for computer vision and tracking with C code defining hardware behavior