ARJUN VAIDYA

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EDUCATION

Computer Science, BS, University of Maryland | GPA 4.0 *Aug '21 - '25*

- **Relevant Coursework**: Object-oriented programming, Data Structures & Algorithms, Computer Systems, Discrete Structures, Calculus, Linear Algebra.
- **Awards & Honors:** Dean's List, Office of Multi-ethnic Student Education Academic Excellence Award

PROFESSIONAL EXPERIENCE

Research Intern, Institute for Systems Research (ISR), UMD *Jun '22 - Aug '22*

- Proposed data-driven metareasoning algorithm for Perimeter Defense Problem with guidance from Dr. Jeffrey Herrmann and GRA Prannoy Namala.
- Performed **Agent Based Simulation Modeling** for assimilating data on performance of available algorithms.
- Applied Exploratory Data Analysis (EDA) techniques and **Linear Regression** on simulation data using Python Data Science packages (Matplotlib, SciPy, NumPy, Pandas, Seaborn, SciKit-Learn).
- Developed mathematical model for predicting logical scenario-classes with 78.08% accuracy.

Incoming Teaching Assistant, Object Oriented Programming *Fall 22*

- Accepted TA for Object Oriented Programming class taught by Prof. Fawzi Emad.
- Responsible for collaborating with TA cohort to assist students with course material, host office hours, supplement instructional content, and grade assignments.

RESEARCH & PROJECTS

Researcher, First Year Innovation & Research Experience (FIRE) Program *Aug 21 – Present*

- Admitted into FIRE's Technology & Applied Science Stream for research exposure & leadership readiness.
- Collaborated with team members and faculty Dr. Nitin Sanket in the Autonomous Unmanned Systems Cluster to develop motion planning algorithms and physical vehicle prototypes.
- Applied **Computer Vision** techniques on video and image input data for object detection using OpenCV.
- Implemented color segmentation to enhance object detection capabilities using **Gaussian Thresholding**.

Project Tango, Bitcamp Hackathon *Apr '22*

- Designed and executed full-stack platform in collaboration with hackathon teammates.
- Customized **User-Based Collaborative Filtering** to identify individuals with similar music interests in Python.
- Identified individuals in a geographic radius using latitude & longitude coordinate data.
- Engineered backend for assimilating data from Spotify's API using **CockroachDB** and **SQL**.

Autonomous Robotics Workshop, IIT Delhi *Feb '18*

- Assembled and programmed Line Follower and Obstacle Avoider Robot using AVR Microcontrollers.
- Leveraged Microcontroller Programming in Embedded C to develop robotics algorithms.

PUBLICATIONS & PRESENTATIONS

Presentation: **Data Driven Metareasoning for Defending a Perimeter Against Cooperative Intrusion,** Maryland Robotics Center Research Symposium. 2022.

TECHNICAL SKILLS

Java, Python, C, MATLAB, JavaScript, SQL, HTML, CSS, Linux OS, Virtual Machines (UTM), GitHub.