Akshith Ambekar

akshith.kumara@gmail.com | linkedin.com/in/akshith-ambekar | github.com/akshithambekar

Education

George Mason University — Fairfax, VA
B.S. Computer Science - 4.0/4.0 — *May 2027*

Thomas Jefferson High School for Science and Technology — Alexandria, VA
Advanced Studies Diploma — *Jun 2024*

Technical Skills

Languages: Python, Java, C++, JavaScript, TypeScript, HTML/CSS, MATLAB, LaTeX

Libraries/Frameworks: Next.js, Express.js, Node.js, Flask, React.js, Tailwind CSS, OpenCV, YOLOv8, NumPy

Developer Tools: Github, Visual Studio Code, Jupyter Notebook, Onshape, ArcGIS

Relevant Coursework

- Artificial Intelligence
- Object-Oriented Programming
- Discrete Mathematics
- Computer Vision
- Web Application Development
- AP Computer Science A
- Data Structures & Algorithms
- Multivariable Calculus
- University Physics 1 & 2
- AP Calculus BC

Experience

George Mason University Autonomous Robotics Lab — Oct 2024 – Present
Undergraduate Research Assistant — *Fairfax, VA*

- Implementing a deep-learning-based ecosystem monitor for the Skill Boss Logistics distribution system to enable comprehensive real-time monitoring of wireless robotic packaging-related operations.
- Utilizes limited, strategically-placed RGB and depth cameras to streamline monitoring, reduce hardware requirements, and minimize cyber-vulnerability exposure.

Dartmouth-Hitchcock Medical Center — Jun 2023 – Aug 2023
Bioinformatics Research Intern — *Lebanon, NH*

- Developed a machine-learning algorithm for analyzing digital whole-slide images of urine cytology specimens to evaluate urothelial cell atypia under the guidance of Dr. Joshua Levy and Dr. Louis Vaickus.
- Designed to systematically tabulate statistics for the Paris System for Human Cytopathology by accurately estimating nuclear-to-cytoplasm ratio for cells within a cluster using semantic segmentation techniques.

Coherence Learning Services — Jun 2024 – Aug 2024
Mathematics and Physics Tutor — *Ashburn, VA*

- Tutored 30+ students in high-school and college-level subjects ranging from Algebra 1 to AP Calculus BC and AP Physics.

Projects

License Plate Detection — Aug 2023 – Jun 2024
Python, YOLOv8, OpenCV, EasyOCR — *TJ Computer Systems Lab*

- Engineered system to identify and analyze license plates using the YOLOv8 detection and EasyOCR character recognition models. Stitches Tesla vehicle dashcam footage into a 360-degree view for data analysis.

ParkIt! — Feb 2023
JavaScript, Node.js, Express — *Project Lead*

- Developed website application to find parking spaces near a user's current location by implementing Next Parking Lot API, Google Maps Web API, self-made processing APIs, and TJHSST's Director system.

AR Rotating Cube — Apr 2024
C++, OpenCV — *Individual*

- Leveraged OpenCV to implement an augmented-reality system. Utilizes 2D-to-3D projection, camera calibration, and pose estimation to project a virtual 3D cube onto a chessboard.

Honors & Awards

Eagle Scout - Boy Scouts of America, Troop 20