

EDUCATION

Bachelor of Science, University of Maryland: College Park, Class of 2027

Majors: Computer Science (Honors), Finance; Minors: Data Science, Robotics and Autonomous Systems

SPECIALIZED SKILLS AND CERTIFICATIONS

Languages: Python, PyTorch, Scikit-learn, Rust, C, C++, Linux, Qiskit, SQL, HTML, MCP, OCaml, React, Flask, Java, JavaScript

Programs: VSCode, Git/GitHub, ROS2 (Humble), VIM, Gazebo | ChatGPT: OpenAI API, Prompt Engineering |

| CAD: Autodesk Fusion 360 | Office: Google Workspace, Microsoft Workspace, Excel | Tableau |

Certifications: Google Data Analytics Certification (In progress. To be completed March 2026), PSM I & II, Excel Certification

PROJECT EXPERIENCE - <https://github.com/AhteshamAlvi>

Exoplanet Habitability Classification ML Model | [GitHub Project Link](#) **January 2026 – Present**

- Developing neural and embedding-based ML models to predict exoplanet habitability using NASA and JPL datasets.
- Engineering feature encodings of parameters and training custom neural networks for similarity-based classification.
- Identifying candidate habitable exoplanets by projecting NASA catalog entries into a learned habitability space.

Quantum Computing Implementation Projects | [GitHub Project Link](#) **January 2026 – Present**

- Implementation of various Quantum Computing concepts such as Grover's Algorithm, Shor's Algorithm, simulating Quantum Key Distribution (QKD), and some experimentation with Quantum ML.

Robotic Arm Manipulator Control (Intro to Robotics) | [GitHub Project Link](#) **August 2025 – December 2025**

- Developed an inverse kinematic planner with integrated computer vision (ArUco tags) into the pipeline for perception for a commercial robotic arm. Ran on real systems with Ros2, Docker, and Gazebo.

Education Inequality Machine Learning Project | [GitHub Project Link](#) **December 2025**

- Developed an end-to-end data analysis & ML pipeline analyzing education inequality, including data cleaning, feature engineering, summary statistics, hypothesis testing, and training/evaluating regression and random forest models to predict student GPA.

Mini C Compiler (OCaml, Rust) | [GitHub Project Link](#) **May 2025**

- Implemented a complete compiler with a lexer and parser, AST construction, constant folding optimization, static type checking, and type inference for a C-like language. Implemented twice, once in Rust and once in OCaml.

AST-Based Unix Shell (C) | [GitHub Project Link](#) **December 2024**

- Implemented a Unix-style shell in C with an AST-based execution engine supporting command parsing, pipes, logical operators (&&, ||), sequencing, subshells, and input/output redirection via fork/exec, dup2, and process control.

FIRE Bioinspired Robotics Research Internship – Flapping Winged Glider | [GitHub Project Link](#) **May 2024 – July 2024**

- Led development of a bio-inspired flapping-wing robotic glider integrating servo actuation, onboard sensing, and telemetry.
- Engineered Arduino Nano firmware for motor torque control, remote receiver interfacing, and SD-card data logging.
- Designed 3D-printed structural mounts and carbon-fiber airframe; validated flight dynamics via wind-based experiments

WORK EXPERIENCE - LinkedIn: www.linkedin.com/in/ahtesham-alvi

Urban Food Alliance | *Software Development Intern* | Remote **July 2025 – November 2025**

- Collaborated with a cross-functional team to develop a Financial Literacy Chatbot using Python and NLP, aimed at improving accessibility to financial advice and management for underserved communities, increasing user engagement by 20%.
- Integrated NLP tools to improve the chatbot's ability to understand and respond to user queries, and refined dialogue by 30%.
- Applied Scrum and utilized Git/GitHub in development, testing, and analysis, leading to a 95% decrease in post-release issues.

College of Mathematics, Computer, and Natural Science | *Federal Work Study* | College Park, MD **January 2024 – Present**

- Managed, scanned, and archived over 4000 documents, refining file organization by 70% and improving retrieval efficiency.
- Audited and entered financial data, including W4 forms, into Workday and Excel, ensuring compliance with IRS regulations.

AI Construction LLC | *General worker, Assistant, Marketing Manager* | Fairless Hills, PA **June 2017 – Present**

- Remodeled multiple residential kitchens, bathrooms, and additions, including cabinet installation, electrical work, appliance integration, plumbing, and drywall & flooring, delivering projects on time and within budget.
- Designed and developed website layouts and marketing materials for company vehicles using Adobe Photoshop.

Code Ninjas | *Code Sensei* | Yardley, PA **June 2022 – December 2022**

- Taught JavaScript to 30+ children, utilizing projects & coding tasks, resulting in 25% improvement in student comprehension.
- Mentored students in developing their own projects, such as coding games, robotic blocks, and beginner coding activities.

OTHER INVOLVEMENTS

UMD Finance Committee | *Budget Reviewer* | College Park, MD **September 2024 – Present**

- Reviewed and approved budget requests from 200+ campus organizations, managing resources and ensuring efficient allocation.
- Administered a \$2.7 million dollar annual budget, organizing expenditures and ensuring financial stability for student leadership.