Andrew Xu

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EDUCATION

University of Maryland, College Park (UMD) — **College Park, Maryland**
BS in Computer Science, BS in Economics — *Expected Graduation, May 2026*

- **Minor:** Robotics and Autonomous Systems
- **Honors College:** Gemstone
- **GPA:** 3.97/4.0, Dean's List
- **Related Coursework:** Object Oriented Programming, Discrete Structures, Introduction to Computer Systems, Organization of Programming Languages, Algorithms, Multivariable Calculus, Linear Algebra, Introduction to Probability Theory
- **Awards:** The Dean's Scholarship at UMD, Johns Hopkins APL STEM Academy Scholarship

TECHNICAL EXPERIENCE

International Consulting Associates (ICA) — **Arlington, Virginia**
Machine Learning Engineer — *May 2024–Present*

- Design and deploy productionized Python solutions with Terraform using AWS services to clients
- Developed a custom Python API using FastAPI to serve and filter OpenFDA device recall information through optimized data processing and Docker deployment
- Utilize GitHub to collaborate effectively with a team of 4 in creating comprehensive projects, interacting with real-world collaborative software development

U.S. Food and Drug Administration (FDA) — **Silver Spring, Maryland**
ORISE Software Engineer Intern — *June 2022–Aug 2022*

- Built an open-source software using Python packages, NumPy and Pandas, to analyze and find patterns in the matrices of radiation data from a spectroscopic photon counting laser machine
- Created 3D models using Matplotlib to visualize the processed laser data
- Implemented a user interface using tkinter that received and validated input from local files to facilitate widespread use of the open-source software

University of Maryland — **Baltimore, Maryland**
Research Intern — *May 2021–Aug 2022*

- Developed machine learning models using Python (SciKit) to estimate brain aging from MRI scans, employing methods like Random Forest Regression and K-Fold cross-validation
- Conducted genome-wide association studies (GWAS) and calculated Polygenic Risk Scores (PRS) using R, analyzing genomic data to identify genetic variants associated with schizophrenia and hypertension
- Performed statistical analyses and causal inference studies, examining the relationship between genetic risks, brain aging, and diseases such as schizophrenia and hypertension through techniques like Mendelian Randomization

PROJECTS

Robot in Dynamic Environment (RIDE) Research Project — **College Park, Maryland**
Research Team Leader — *Jan 2024-Present*

- Develop a research proposal to create an autonomous multi-robot search-and-rescue system capable of navigating around moving obstacles to moving targets
- Lead a team of 11 to perform a literature review on cutting edge multi-robot navigation and communication research
- Create an introductory robotics textbook focusing on topics like computer vision and deep learning to guide and support other group members

Detecting Fraudulent Car Insurance Claims using Images — **College Park, Maryland**
Machine Learning Engineer — *Jan 2024-May 2024*

- Trained and optimized a convolutional neural network using Tensorflow to detect fraudulent insurance claims from images of vehicle damage with an accuracy of 0.893
- Developed and deployed a website using Flask for users to upload images to the model and receive a prediction of whether the claim is fraudulent

SKILLS

Programming: Python, Java, MATLAB, SQL, C, C#, R, Assembly, Julia, Swift, OCaml, Rust
Tools: VS Code, Docker, Excel, Repl-it, PyCharm, Unity, Android Studio, RStudio, Blender, Xcode, Anaconda