

# Zain Ghazanfar

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## EDUCATION

### Georgia Institute of Technology

Atlanta, GA

B.S. Computer Science, College of Computing — GPA: 4.00, Dean's List

Expected May 2026

**Concentration:** Devices & Intelligence

**Relevant Coursework:** Data Structures & Algorithms, Design & Analysis of Algorithms, Discrete Mathematics, Introduction to AI, Object-Oriented Principles, Perception & Robotics, Computer Systems & Networks

## EXPERIENCE

### Machine Learning Research Intern – Autonomous Systems

Jul 2024 – Present

Georgia Institute of Technology, ACT Lab

- Implemented deep learning and reinforcement learning models to optimize autonomous vehicle trajectory planning
- Developed and fine-tuned CNN, RNN, and DQN algorithms in PyTorch for lane-change control optimization
- Utilized GAIL and Transformer models to accurately replicate and predict human-like driving behavior in CAVs
- Integrated CARLA simulator to create realistic environments for training agents under various driving conditions

### Co-Founder & Automation Software Engineer

Jan 2024 – Present

Zaphor Solutions

- Built and scaled an Amazon e-commerce business, generating \$200K+ in revenue through FBM and FBA channels
- Implemented third-party automation tools (e.g., inventory tracking, repricing software) to streamline operations
- Developed Python scripts to analyze sales trends, optimize pricing, and track inventory across 70+ SKUs
- Analyzed keyword performance and customer search term reports to restructure Amazon PPC ad groups, resulting in a 20% increase in conversion rate and improved ACoS across multiple product listings
- Managed supply chain logistics, maintaining a 95% in-stock rate through forecasting and vendor coordination

### Software Developer – Digital Automation & Web Systems

Dec 2022 – May 2024

Endor Media

- Engineered scalable AI-powered automation scripts using Python to streamline client acquisition workflows
- Designed and deployed interactive data dashboards by integrating GoHighLevel APIs with custom frontend components, enabling real-time visualization of campaign KPIs, lead generation metrics, and sales performance
- Improved website speeds and SEO by implementing server-side rendering, minimizing render-blocking resources, and optimizing JavaScript bundles, resulting in a 2.3x faster load time and enhanced Google Core Web Vitals

### Data Science Intern – Materials Informatics

Jan 2023 – May 2023

Georgia Institute of Technology, SMART Lab

- Created Python scripts in Jupyter to automate the analysis of ferroelectric hysteresis behavior and switching dynamics in lead zirconate titanate (PZT) thin films, improving research efficiency and reproducibility.
- Developed custom data visualization tools using Matplotlib to effectively display experimental findings and trends
- Implemented GIWAXS dataframes and pandas to classify, preprocess, and analyze large-scale research datasets

## PROJECTS

### Piclasify | Python, TensorFlow, OpenCV, Pandas, Scikit-Learn, Matplotlib

- Fine-tuned a pre-trained VGG16 model for image classification on CIFAR-10, achieving nearly 85% accuracy
- Engineered a reproducible data preprocessing pipeline using OpenCV and Pandas to normalize, augment, and prepare image data for model training.
- Improved model generalization by conducting systematic hyperparameter optimization across dropout rates, batch sizes, and learning rates using TensorFlow callbacks to prevent overfitting and accelerate convergence

## AWARDS AND ACHIEVEMENTS

Eagle Scout

Jun 2023

Zell Miller Scholarship Recipient

May 2023

National Merit Semifinalist

Sep 2022

Georgia Certificate of Merit

Apr 2022

## TECHNICAL SKILLS

**Languages:** C/C++, Assembly, HTML/CSS, Java, JavaScript, LaTeX, MySQL, Python, R, Swift

**Frameworks/Tools:** AWS, Android SDK, Docker, FastAPI, Firebase, Firestore, Git, JUnit, Node.js, React

**Libraries:** Matplotlib, NumPy, OpenCV, pandas, PyTorch, SciPy, Scikit-learn, TensorFlow