Muhammad Abdullah Goher

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EDUCATION

University of Pennsylvania, School of Engineering and Applied Science — **Philadelphia, PA**
Bachelor of Science in Engineering in Computer Science — **May 2027**
Concentration: Artificial Intelligence — **GPA: 3.65**

TECHNICAL SKILLS

Programming: Java, C, JavaScript, Python, Git/GitHub
Tools & Frameworks: Vite + React, Express, Scikit Learning, Pandas, Numpy, PyTorch, Matplotlib, noSQL
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RELEVANT COURSEWORK

Data Structures, Algorithms, Big Data Analytics, Introduction to AI, Linear Algebra, Computer Systems, Automata Complexity

PROFESSIONAL EXPERIENCE

Computational Social Science Lab — **Philadelphia, PA**
Research Assistant — *05/2025 - Present*
- Built and tested a MERN-stack data hub for fine-scale human mobility, implementing version control and end-to-end Cypress tests at 90 %+ coverage to ensure reliability and maintainability
- Collaborated with post-doc and PI on mobility algorithms, refining analytics for large GPS datasets and integrating them into the platform's data-processing pipeline
- Expanded system capabilities with backend enhancements by adding new REST endpoints and services for deeper mobility insights and smoother data ingestion

Children Hospital of Philadelphia — **Philadelphia, PA**
Full Stack Developer — *11/2024 - Present*
- Collaborated in a team of 8 people on the development of a web-based data organization platform for autism research, leveraging MERN stack and FastAPI to enhance data management and accessibility
- Designed and optimized user interfaces using react-redux and tailwind, including a responsive dashboard and data entry forms (editing, deleting, and new entries) to streamline workflows for researchers and clinicians
- Implemented a secure login system using JSON Web Tokens (JWT) with HTTP-only cookie for authentication and state management fetching personalized data for that specific user

Penn Assistive Devices and Prosthetic Technologies — **Philadelphia, PA**
Machine Learning Engineer — *09/2024 - Present*
- Collaborated in a team of 6 people to develop a computer vision model for detecting and identifying surgical tools in real-time during procedures, aiming to enhance surgical precision and safety
- Curated custom dataset working with Penn Med surgeons and Ttained deep CNN and Vision transformer model using PyTorch on Kaggle and custom datasets with over 10,000 images
- Fine-tuned model weights through iterative training and optimization techniques, achieving 90% accuracy in detecting and classifying surgical tools across varying angles

Clab AI — **Hybrid**
Machine Learning Engineer Intern — *05/2024 - 08/2024*
- Assisted develop an AI platform aimed at assisting students with university applications, used by 100+ students
- Performed exploratory data analysis on data from over 100 universities using Pandas, NumPy, and Matplotlib to identify trends in financial aid distribution and accessibility
- Trained Random Forest and Linear Regression models to predict financial aid eligibility for incoming students, from the analyzed and cleaned data with hyperparameter tuning and optimization

PROJECTS

AlumniConnectAI Chrome Extension
- Developed a Manifest V3 Chrome extension with React popup and content scripts to scrape alumni profiles (name, title, employer, emails, academics) from the university directory
- Employed extensive prompt engineering to craft LLM prompts for auto-generating personalized cold emails, integrating SerpAPI AI insights and a resume parser
- Persisted results in React state and localStorage to drive a dynamic sidebar of saved alumni