

Ammar Ali

✉ ammar.ali2002@gmail.com

☎ 630-849-9974

Champaign, IL

🌐 [linkedin.com/in/aali02](https://www.linkedin.com/in/aali02)

🐙 github.com/ammario

EDUCATION

- **Bachelors in Brain & Cognitive Science, Minors in Computer Science & Statistics** Aug 2022 - May 2025
University of Illinois at Urbana-Champaign, College of Liberal Arts & Science
 - **Courses:** Artificial Intelligence, Data Analysis with Probabilistic Graph Models, Neural Interface Engineering, Signal Processing, Database Systems, Statistical Analysis for Biomedical Imaging, Data Structures & Algorithms, Bioinformatics, Probability & Statistics for CS, Biostatistics with R, Cognitive Neuroscience Lab with Matlab

EXPERIENCE

- **Software Engineer** Feb 2023 - Aug 2024
Disruption Lab at Gies Champaign, IL
 - Engineered an **OpenAI-powered chatbot** to support external clients and assist navigation of internal clusters for the UIUC Data Science Research Services; built using **Python, JavaScript, Langchain** and **Steamlit**.
 - Constructed parsing functions to transform training documents to .txt and embeddings, facilitating efficient search in a vector space. Used **pytest** & **GitHub Actions** for automated testing protocols.
- **Machine Learning Engineering Intern** Jun 2024 - Aug 2024
University of Illinois Urbana-Champaign Remote
 - Trained **YOLO-V8** object detection model to identify recyclable materials on UIUC campus waste bins in real time. Implemented with **Python, Pytorch, HuggingFace, Docker** & **GitHub Actions**.
 - Assisted data preprocessing (image augmentation, labeling) & hyperparameter tuning for faster detection and reduced annotation errors by more than **20%** with **OpenCV**.
- **Field Data Engineering Intern** Jun 2023 - Nov 2023
SpotGenius Lombard, IL
 - Enhanced video monitoring & ticketing systems in parking lots. Introduced crop zones for refined license plate detection at high speeds; improving **License-Plate Recognition (LPR)** for anomaly detection and secure real-time streaming with **Python-scripts** & **Azure**.
 - Gained proficiency in data streamlining & processing for multi-camera integration in **Azure Cloud** & **FortiMonitor**.
- **Software Development Director** Aug 2022 - Aug 2023
Illini VEX Robotics Champaign, IL
 - Directed the development of a **Brain-Computer Interface(BCI)** car, using **EEG** signals to enable movement in a remote-control car. Developed **K-Nearest Neighbors (KNN)** clustering algorithm for direction classification.
 - Researched and implemented template matching with **OpenCV**, to improve the real-time detection accuracy of on-vehicle cameras in motion.

PROJECTS

- **VR-Neurofeedback Therapy** Aug 2023 - Present
EEG-Based Emotional State Classifier with Tensorflow
 - Engineered real-time neurofeedback system with **Python** & **ROS** for focus detection from **EEG** signals. Integrated VR using **C#** & **Unity**, via **UDP**. Dynamically adjusts visual feedback elements for a closed-loop cognitive therapy experience, improving the user's attentional control.
 - Employed signal processing techniques like filtering (**Notch+Bandpass**), spectral analysis (**FFT+PSD**), artifact removal (**ICA/PCA**), and feature extraction (**time/frequency/wavelet domains**).
 - Implemented ML models like **SVM, Random Forest**, & **CNNs (TensorFlow)** for focus classification.
- **ZKP Validation System** Jan 2023 - May 2023
Blockchain-Based Auditing System | RSM
 - Developed the first-ever blockchain auditing system demo using for faster digital asset validation and analysis using **Zero-Knowledge Proofs (ZKPs)**. Built with **Python, Circom** & **JavaScript (Snark.js)**.

TECHNICAL SKILLS

Languages: C++, Python, R, Javascript, Java, SQL, TypeScript, HTML+CSS

Frameworks & Libraries: NumPy, Pandas, Scikit-learn, OpenCV, PyTorch, TensorFlow, CUDA, Ray, ROS, Flask

Developer Tools: Git, Github, UNIX, Docker, Kubernetes, Node.js, CMake, GDB, Unity

Cloud/DB: AWS, Azure, Google Cloud, Power BI