Griffin Burke

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EDUCATION

University of Illinois Urbana-Champaign Expected: May 2027
Bachelor of Science in Computer Science, Minor in Mathematics *GPA: 4.00*

Relevant Coursework: Data Structures • System Programming • Probability and Statistics for Computer Science
During Fall 2025: Intro to Algorithms and Models of Computation • Numerical Analysis • Database Systems

EXPERIENCE

AI Team Lead, Kashmir World Foundation | Great Falls, VA (Remote) *May 2025 – Present*
- Leading a team of summer interns on the data analysis and modeling of >500 hours of rainforest audio and environmental data to detect human presence and possible illegal activity
- Directing efforts on the identification of sentinel species (animals that have a substantial difference in call behavior during human presence) and their utilization within human presence detection models

Machine Learning Engineer Intern, Kashmir World Foundation | Great Falls, VA (Remote) *September 2024 – May 2025*
- Engineered a pipeline for rainforest audio analysis, combining detected species from BirdNET with a variety of contextual data including our own human activity simulations, microphone location, time, and weather data
- Conducted initial training and analysis on the efficiency of different sized YOLOv8 models for detecting rainforest species through trail cams, resulting in a lightweight model with a precision and recall of 88.5% and 88.2%
- Fine-tuned the optimal base model with systematic hyperparameter sweeps and training data augmentation, resulting in a 3.5% increase in precision and recall

Undergraduate Research Assistant, Illinois Digital Animal Systems Lab | Urbana, IL *January 2025 – Present*
- Recovered and reconstructed a >200GB .bag file with corrupted frames, saving over 350,000 overhead images
- Achieved a mean average precision (mAP50-95) of 99.4% in segmenting relevant portions of overhead cattle images
- Developing a system of sequential models to detect if a cow is in frame, segment the relevant portion, extract measurements, and utilize that information to estimate the cow's weight and body score

PROJECT HIGHLIGHTS

Note Transfer | *Python, TypeScript, FastAPI, Svelte, TailwindCSS* *May 2025 – Present*
- Prototyping an application that digitizes handwritten notes into structured markdown
- Architecting and developing the models and pipeline for segmentation of note organization, translation from handwriting to text, and reassembling of text into formatted markdown

UIUC Involvement Bot | *Python, Flask, Keras, HTML/CSS/JS, SQLite* *February 2024 – June 2024*
- Utilized a full stack of languages and tools to develop the front end, Flask API, and neural networks of a club recommendation website for University of Illinois students
- Developed, trained, and tested two Keras neural network models to determine the user query's club category and intensity level, with accuracies of 89.4% and 95.6%

INVOLVEMENT

Vice President, Project Code UIUC *May 2025 – Present*
- Oversee student organization logistics, mentor project managers, and provide support for other leadership's duties

Project Manager, Project Code UIUC *September 2024 – May 2025*
- Led a project called CompanyMatch, a website that utilizes HuggingFace sentence transformers to recommend companies to users based on their preferred company values, culture, and environment
- Managed a team of 14, utilizing weekly stand-ups for both the front and back end teams to synchronize learning and development for UI features, API, and model development

Developer, Project Code UIUC *February 2024 – May 2024*
- Collaborated with a team of 12 over two different development areas to build the UIUC Involvement Bot
- Designed and built the Flask API, front end for the website, and two neural networks for sentiment analysis

Course Assistant, Linear Algebra with Computational Applications *January 2025 – Present*
- Assist with Python-based labs and homework through lab sections and office hours, reviewing concepts such as linear transformations, least squares, linear regression, Singular Value Decomposition, and Principal Component Analysis

TECHNICAL SKILLS

Languages: Python, C, C++, TypeScript, Kotlin, Java, HTML/CSS
Libraries: Scikit-learn, pandas, numpy, Ultralytics, Keras
Frameworks: Flask, FastAPI, React, Svelte, Express, React Native, React Redux Toolkit