KAHLIA HOGG

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Fulbright Scholar | AI Engineer | Former Professional Athlete

🛠️Engineering performant AI solutions grounded in software engineering and MLOps/DevOps principles

⚡ Energized by computer vision, edge AI, sports x climate tech

🐻Dev Stack: Rust, Python, PyTorch, Tensorflow, HuggingFace, WandB, Onnx, Docker, git

🗼Cloud Platforms: AWS, Azure

EDUCATION

Duke University	M.Sc. Computer Science (AI/ML)	2022 – 2024
Deakin University	Graduate Certificate, Artificial Intelligence	2021
University of Colorado, Boulder	B.Sc. Mechanical Engineering	2012 – 2016

EXPERIENCE

Associate in Research & Lead Teaching Assistant   Jan. 2024 – Aug. 2024

Duke University
- Operationalizing local LLM/SLM pipelines leveraging AWS and Rust for educational content delivery
- Researching LLM and chatbot preferences within the Higher Education environment
- Leading collaboration with AWS to deliver Lightsail for Research solutions for Duke University

AI Intern x Women in Sports Tech Fellow   May 2023 – Jul. 2023

IBM iX Sports & Entertainment
- Developed training pipelines and performed model validation for the Wimbledon AI Commentary model
- Trained a tennis classifier with >92% F1, <0.03 sec latency for automated highlight package generation

Video Machine Learning Engineer   Nov. 2021 – Jul. 2022

The Australian Institute of Sport, Olympic Sports Innovation
- Developed a novel sport-specific action recognition pipeline to support Australian Olympic sports teams
- Created a custom 3D sports motion dataset by simulating camera projections used in sports broadcasting

BI Developer (Data & AI Services)   May 2020 – Jul. 2021

Pernix
- Worked directly with clients to develop data storage solutions, ETL pipelines, custom microservice integrations, self-service analytics platforms, user documentation, and CI/CD deployment protocols

Sales Insights Analyst   May 2019 – Apr. 2020

Bluescope Australia
- Built a PowerBI reporting portal on top of legacy systems to improve sales and manufacturing forecasting

Professional & Collegiate Football/Soccer Player   2010 – 2021

Australian U17 & U20, Westfield W-league, Chelsea FC Academy, University of Colorado (Boulder)
- Captain (University of Colorado, Boulder), Vice-Captain and Senior Leadership group (Adelaide Utd)

PROJECTS

Transcriber
-   Build and deploy an end-to-end AWS pipeline and Rust CLI tool to run video transcription leveraging whisper.cpp. Automate object storage (S3), on-demand resource provisioning (Lambda, EC2 Spot Instances), containerization (Docker) and CI/CD (CodePipeline, Github Actions).

Duke AIPI Chatbot
-   Instruction finetuned Mistral-7B on databrickicks-dolly-15k to act as the base model for a chatbot with RAG (Pinecone, Langchain) + websearch agency to answer questions for prospective Duke AIPI students. Configured FastAPI, Gunicorn, NGINX and supervisor for persistent deployment on AWS EC2.

Finetune ClimateGPT for Climate Specific Sentiment Analysis
-   Optimized finetuning and inference of ClimateGPT for a single NVIDIA A10 GPU using QLoRA and RLFH to achieve tenfold reduction in carbon footprint per inference sample.

Candle Cookbook
-   Open-source initiative at Duke University to democratize access to SOTA LLMs by building, deploying , and documenting end-to-end pipelines to package models as locally executable Rust binaries.

Comparative Analysis of Zero-Shot Capabilities of GANs
-   Comparative analysis and performance assessment of the zero-shot capabilities of GANs (GAN, WGAN, WGAN-GP, AC-GAN) when generalizing from MNIST to CIFAR without hyperparameter tuning.

ROPE: Real-Time Operating-Room Pose-Estimation on the Edge
-   Evaluate the efficacy of edge deployed pose estimation in the operating room by analyzing keypoint accuracy within the power and latency constrains of on-device inference using a Raspberry Pi.