Aquib Iqbal

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Programming Languages: C, C++, Python, Java, SQL (MySQL), Dart
Frameworks: PyTorch, React, Tensorflow, Keras, scikit-learn, NumPy, pandas, Flask
Technologies: Git, Firebase, Flutter, Linux, Latex, LLM, HuggingFace, Google Colab, GCP, Postman

EDUCATION

University of Massachusetts Amherst | MS Computer Science | GPA: 3.88 **May 2025**

Coursework: Advance Neural Network (CS682), Advance Natural Language processing(CS685), Machine Learning for Child Rescue (CS596E), Intelligent Visual computing (CS574), Theory of software Engg.(CS520), Applied Statistics (MT501)

WORK EXPERIENCE

DataCore | [Github] **Feb.2024 - May. 2024**
Data Science Intern MA, USA

- Developed a **tattoo recognition model**, optimizing and compressing long-duration video analysis to streamline processing efficiency. Labelled images using advanced tools such as **LabelImg** and **CVAT**, ensuring high-quality **data annotation**.
- Utilized **YOLOv8** for high-accuracy tattoo detection from extensive video footage. Integrated the powerful **CLIP** model to effectively cluster images based on detected tattoos with detailed meanings and context for each tattoo.

Binghamton University (SUNY) | [Github] **Jan. 2023 - May. 2023**
Research Intern NY, USA

- Extensively reviewed literature focusing on diverse **backdoor attack** methodologies targeting deep learning algorithms.
- Successfully executed **trojan attacks with an 89% success rate**, underscoring the significance of safeguarding deep learning algorithms in Unsupervised Domain Adaptation. Showcasing the need for heightened security measures.

Okayama University **Aug. 2022 - Dec. 2022**
Summer Research Intern. Okayama, Japan

- Implemented **Swin Transformer (SwinT)** to accurately classify maize leaf diseases (blight, common rust, grey leaf spot) with a groundbreaking **95.9% accuracy**, outperforming current disease identification technique. ***Publication***
- Applied **Vision Transformer(ViT)** to classify 13 distinct bearing defects, using experimental data CWRU. Achieved a high classification accuracy of **98.8%** by converting vibration signals into 2D time-frequency images through STFT. ***Publication***

University of Maryland **May. 2022 - Jul. 2022**
Research Intern MD, USA

- Engineered **TeliNet 2.0** model for **ECCV**, analyzing **140GB** of medical images; improved **accuracy by 10%**.
- Achieved a top-quartile performance ranking in the competition by reducing computational resource requirements by **30%**, showcasing exceptional skills in optimizing deep learning models for large-scale health data.

Publications:

- **TCNFormer**: Temporal Convolutional Network Former for Short-Term Wind Speed Forecasting. **(Submitted: AAAI 2025)**
- **EAViT**: External Attention Vision Transformer for Audio Classification. **(Submitted: APSIPA)**
- **CrackUNetFormer**: An Efficient and Effective Crack Segmentation Model **(Submitted: WACV 2025)**
- **SCNN-LSTAM**: Spatial CNN- Long Short-Term Attention Memory Network for Tomato Leaf Disease Classification. **(Submitted)**
- **Smart manufacturing with transfer learning under limited data: Towards Data-Driven Intelligences**. **[Paper]** **[Code]**
- A **Vision Transformer**-Based Approach to Bearing Fault Classification via Vibration Signals. **[Paper] (APSIPA)**

PROJECTS

PerfectPitch | Demo | Github | (Next.js, Tailwind.css, Firebase, Gemini.ai, LLM, Assembly.ai) **2024**

- Engineered PerfectPitch, an AI-driven platform for optimised interview prep, integrating LLM and speech recognition for customised feedback and simulations, **enhancing candidate performance by 35%.**
- Developed an LLM-based resume analysis feature in PerfectPitch, offering tailored feedback and ATS score improvements, resulting in a **25% higher match rate for job applications.**

MoodMeter.ai | Demo | Github | (OpenCV, PyTorch, AgoraSDK, React.js, AWS) **2023**

- Created MoodMeter.ai, leveraging Python, Agora SDK, and Large Language Models for real-time emotion detection, boosting online meeting **engagement by 25%**.
- Implemented advanced features for facial and voice sentiment analysis, with an intuitive dashboard, improving meeting **effectiveness by 30% according to user feedback.**

SSORT| Github | (Python, HuggingFace, PyTorch, Flask) **2022**

- Led SSORT project, enhancing off-road terrain analysis with Semantic Segmentation models (UNet, DeepLabv3, FCN). Achieved a **10% accuracy increase** in off-road datasets using SegFormer, evidenced by IOU, F1 score, and Pixel Accuracy.

Awards & Certification

Specialization: MLOps, Deep learning, Tensorflow in Practice, Python, and **Flutter**
Hackathons (Rank): Hack413 (1st), HackUMass XI (1st), HackSNU (1st), HackAMU 2.0 (1st) and **HackAMU 1.0 (2nd)**