Akilan "Akil" Rammohan

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Education

University of Wisconsin-Madison (Class of 2026) — Madison, WI
BA in Computer Science, BA in Data Science — *Sep 2022 – Present*

- Relevant past coursework: Machine Organization, ML for Engineering Research, Intro to Compiler Design, Intro to Computer Engineering, Discrete Math, Linear Algebra, Data Structures, Algorithms, Machine Learning, Intro to Linguistics, Morphology, Syntax
- Coursework completed by Summer 2025: Deep Learning and Generative Models, Theory of Programming Languages

Los Altos High School — Los Altos, CA
35 ACT, National Merit Finalist — *Aug 2018 – Jun 2022*

Experience

Undergraduate Researcher — May 2024 – Mar 2025
NeuroErgonomics Lab at UW-Madison — *Madison, WI*

- Used Unity and C# to develop a robust VR app for police training, built for HTC Vive and Meta Quest 3
- Used LLM powered AI NPCs to mimic citizens, developed prompt engineering framework for consistent behavior
- Collected and analyzed heart rate, eye tracking, and implicit bias data using Python and R
- Mentored new undergrads on research objectives, questions, data collection and analysis

Software Intern — Jun 2021 – Aug 2021
Wordly.ai — *Los Altos, CA*

- Created analytic dashboards for senior leadership to track usage data and language data
- Tested Katalon Studio and Selenium automated testing tools, wrote Katalon Studio scripts for testing
- Presented to senior engineering team on which testing tool to implement based on research

Projects

Deepfake Audio Detection | *Python, Pytorch, Huggingface* — Feb 2025 – Apr 2025

- Compared CNN, transformer, and conformer architectures for deepfake audio detection
- Finetuned downstream classifiers in open source wav2vec2 and wav2vec2-conformer sequence classification models
- Built custom classifier for the VGGish CNN model
- Trained/fine-tuned on the ASVSpoof 2019 dataset
- Pre-processed audio using librosa to a standard 16khz and 4sec
- wav2vec2-conformer performed best at detecting spoofed audio clips from real audio clips

TAVRFinder | *Swift, SwiftUI* — Jun 2022 – Aug 2022

- Created an iOS app that uses sizing algorithms to properly size transcatheter aortic valve replacement devices
- Intended users are interventional cardiologists, helps to drastically simplify physician workflow
- Uses relevant sizing algorithms, takes into account possible complications and raises errors accordingly
- Available on App Store (with adjustments for HIPAA compliancy, full app is in use at local hospitals)

NBA Win Predictor | *Python, Scikit Learn* — Jan 2024 – May 2024

- Research project with Informatics Skunkworks at UW-Madison
- Neural network classifier to predict a win or loss for a team given their matchup and season stats up to that point
- Cleaned and prepped all-time NBA game stats dataset
- Achieved 64% prediction accuracy after hyperparameter search and other model improvements

Balloc and Bfree | *C* — Oct 2023 – Nov 2023

- Custom memory allocator for C
- First implemented with an implicit free list and first fit allocation
- Later used a linked list for an explicit free list and best fit allocation to reduce fragmentation

Technical Skills

Languages: Python, C/C++, Java, R (tidyverse), Haskell, Javascript, Swift, C#/Unity, HTML/CSS, SQL
Technologies: Git/Github, Huggingface, Linux/Unix, Kubernetes, Docker, PyTorch, Scikit-Learn, Pandas, NumPy, matplotlib, tidyverse, ggplot2, transformers
Topics: Machine Learning, Deep Learning, Mobile Development, Data Science, LLMs, Natural Language Processing