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JACOB LEONE

AI ENGINEER

Portfolio: **https://www.jacobleone.tech**

Summary

I am driven by a passion for problem solving, both technically and creatively. In my work within AI-centric teams, I thrive on working together to achieve a shared mission: to deliver extraordinary value to clients efficiently and effectively. My academic background includes an intense graduate program at one of the leading AI universities, where I focused on integrating artificial intelligence with medical devices. This training has given me a unique perspective on AI engineering, focusing on an ethical, user-centric approach, and a deep understanding of the complex interactions between people and technology. Outside of academia, I am an active learner, developing leadership, creative thinking, problem solving, and driving initiatives from concept to completion.

Education

Master of Science in Artificial Intelligence **Cumulative GPA: 3.9**

Florida Atlantic University, Boca Raton, FL. Graduation date: December 2023

Technical Skills

Programming Languages: Python, C/C++, Matlab, TypeScript, R, Go, SQL
Tools & Technologies: Wandb, Docker, Postman, Deep Learning, DSP, ESP32, Raspberry Pi
Operating Systems: Linux Ubuntu, Windows, MacOS
Frameworks: Pytorch, Tensorflow, Keras, Pandas, Numpy, Scikit-Learn, MatPlotlib, Seaborn

Professional Experience

Machine Learning Medical Engineer, Aventusoft | Boca Raton, FL *August 2024–Present Day*

Developed predictive AI models for use in medical devices and leveraged data science techniques to enhance algorithm functionality.

- Curated large medical datasets of ECG signals sourced from publicly available datasets as well as internal company data.
- Designed training routines for developing classification and predictive AI models for use in FDA approved medical devices.
- Collaborated with a cross functional technical team involving cloud architecture, low level firmware and hardware devices and biomedical engineers to integrate an end to end DSP based AI system into the company's flagship product.

Team Lead & Software Engineer, AuthentiKid | California • Idaho • Florida *August 2023–August 2024*

Responsible for leading the development of scalable and secure AI driven software solutions to meet AuthentiKid's operational demands. Directed a multidisciplinary team in creating innovative software products.

- Led the design and implementation of high-performance AI software architectures, delivering custom solutions that enhanced AuthentiKid's service offerings, including security and client management systems.
- Coordinated with a diverse team of software developers, ensuring project alignment with strategic objectives and fostering an agile, iterative development culture.
- Implemented best practices in code quality, version control, and continuous integration/continuous deployment (CI/CD) pipelines, substantially improving deployment efficiency and system robustness.
- Ensured the integration of security measures at every stage of software development, prioritizing data integrity and user privacy.

Embedded Systems Developer, Contract w/Professional Engineer for Vector Climate | Pompano, FL *May 2020–2023*

Contributed to the design and manufacturing of Vector Climate's sophisticated mobile cooling systems, focusing on embedded systems and hardware integration.

- Developed manufacturing test software to testing level sensors, keypads, LED Strings, audio output, prototyping application configurator.
- Tasked with printed circuit board (PCB) prototype & test equipment assembly responsibilities, including circuit prototyping, conducting unit tests, and executing functional assessments as directed by the Project Manager.
- Actively involved in on-site project management, overseeing the progress and adherence to timelines, implementing strategic planning, and ensuring the quality of project deliverables.

Relevant Projects

Generative Adversarial Network | Generative AI **December 2023**

Audio based generative neural architectural system specializing in the synthesis and analysis of urban soundscapes.

- Developed a Generative Adversarial Network (GAN) that innovatively generates realistic urban sound environments, utilizing deep learning techniques to enhance the realism of synthetic audio.
- Integrated feature extraction methods to capture distinctive urban sound signatures, enabling the GAN to produce a diverse array of soundscapes that mimic real-world complexity.

Online Deep Learning Based Age Authentication | AI Web App **November 2023**

Sole developer of a web-based application designed for age verification, enhancing business and client security through online user classification.

- I Implemented a secure authentication flow by integrating JSON Web Tokens (JWT), enabling businesses to validate client ages reliably.
- Programmed the age classification system using TensorFlow, allowing for local processing of quiz responses to protect user privacy.
- Achieved seamless on-site user age inference by employing TensorFlow.js, facilitating the real-time operation of the model directly within web browsers.
- Deployed the application and model on AWS, ensuring scalable and robust server infrastructure for handling authentication requests.

Torch Audio Lesson Series | Audio in AI & Education **February 2024**

Developed a comprehensive educational series on applying PyTorch to audio processing for AI applications, blending theoretical knowledge with practical

- Provided a comprehensive introduction to PyTorch, covering its core concepts like tensors and computational graphs.
- Demonstrated techniques for loading, processing, and visualizing audio data within the PyTorch framework.
- Taught methods for extracting key audio features, including spectrograms and MFCCs, using PyTorch's utilities.
- Guided the development of a simple audio classification model leveraging convolutional neural networks (CNNs).
- Explored advanced audio processing techniques to enhance model accuracy, such as data augmentation and feature engineering.
- Introduced transfer learning concepts for audio, showing how to apply pre-trained models to new audio tasks with limited data.
- Covered the end-to-end process of deploying audio models into production for practical applications.

Relevant Coursework

Data Structures	**Deep Learning**	**Natural Language Processing**	**Advanced Internet Systems**	**Data Science**
Cognition	**Artificial Intelligence**	**Software Engineering**	**Analysis of Algorithms**	**Comp Foundations of AI**