Varsha Prasad

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TECHNICAL SKILLS

Languages: Python, Java, JavaScript, C#, Unity, R, MATLAB, PHP, Excel VBA
Frameworks/Tools: React, Express, Node.js, MySQL, Docker, Apache, Linux, Figma, Confluence
Libraries: Pandas, Numpy, NLTK, Tensorflow, Keras, Sci-kit Learn, OpenCV

WORK EXPERIENCE

Research Assistant — May 2021 – Present

Behavior Analytics and Modeling Lab, University of Waterloo

- Conducted a thorough evaluation of the Chicago Police Department's Bureau of Detectives' **Area Technology Centers** under the guidance of Prof. McKay(UW)
- Used a blend of qualitative methods and data analytics in **Excel**, **R**, and **Python** to assess the impact of these centers on case resolution, with a specific focus on processing **1,000,000+** historical case data points
- Visualized and organized data using **React, Docker** and the LAMP stack(**Linux, Apache, MySQL, PHP**)

Machine Learning Developer — June 2022 – Nov 2023

Actionable Inc.

- Enhanced the functionality of the user dashboard with machine learning for over **250,000+ client data points** and created thorough documentation using **Confluence**
- Implemented sentiment analysis through the model VADAR with an **87%** success rate
- Developed keyword extraction utilizing Python's **Natural Language Toolkit** and text summarization featuring using **Hugging Face Transformers**, **Tensorflow** and OpenAI's API

Software Development Lab Intern — July 2021 – Feb 2023

BioRobotics Lab, UC Irvine

- Programmed many features on a **C#-based robot** to measure ankle proprioception through a criss-cross test
- Conducted an Event-Related Potential (ERP) data analysis study on **MATLAB** correlating ankle movement with brain waves with the EEG data of **20+** patients

PROJECTS

Duck Ecosystem Simulation | *Unity, C#*

- Developing a captivating Duck Ecosystem Simulation in **Unity**, leveraging a **Finite State Machine** for nuanced duck behaviours like wandering, feeding, mating, and drinking water throughout a 3D terrain

VitalBridge | *React, Express.js, Node.js, MySQL*

- **Full-stack** Health Monitoring/TeleMedicine platform that provides real-time health monitoring, AI consultations, medical record management, and alerts and reminders for medications and appointments
- Front-end developed in **React**, with a dashboard for real-time visualization of health metrics using **Chart.js**
- Scalable backend built using **Express** and **Node.js** with a **MySQL** database
- User registration and log-in feature that employs **JWT** for enhanced authentication and secure sign-in

Neurofeedback Program to Enhance Meditation | *Python, Sci-kit Learn, Brainflow, Tensorflow, Keras*

- Built an EEG headset utilizing the OpenBCI Ganglion Board and used Python, the Brainflow library, enabling the detection of various brain states(relaxed, concentrated) to implement auditory feedback during meditation
- Preprocessed the data using **Sci-kit Learn** using Fourier transform, highpass filter and Butterworth filter reducing noise interference by **70%**
- Developed and trained neural network model using **TensorFlow** and **Keras** to classify emotions based on EEG brainwave data from Kaggle that was also pre-processed using **Sci-kit Learn** with an **87%** accuracy.

United Nations Consulting Challenge | *Figma, React, Twilio*

- Led a team of four as Project Manager in a consulting challenge, developing a solution with a prototype and slide deck achieving a **90%** client satisfaction rating
- Created a free radio-broadcasted education system on **React** via SMS on **Twilio** to empower girls in Sierra Leone for greater inclusion in the digital economy

EDUCATION

University of Waterloo — Waterloo, ON

Candidate for Bachelor of Applied Science in Management Engineering — *Graduating April. 2028*