

Varsha Prasad

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TECHNICAL SKILLS

Languages: Python, Java, JavaScript, C#, Unity, R, MATLAB, Excel VBA

Tools: React, Express, Node.js, MySQL, Figma, Confluence, Pandas, Numpy, Tensorflow, Keras, OpenCV

WORK EXPERIENCE

Software Development Intern

May 2024 - August 2024

Pragmatica Inc. (VR Speech Therapy Company)

- Enhanced the core product by developing environments and **5+ VR activities** using **C# and Unity Engine** with a Finite State Machine, expanding the product's feature set and capabilities.
- Updated features on a web data dashboard app using **React and Firebase** for real-time data management
- Designed and structured over **100 activities**, including **40+ specifically** tailored to enhance linguistic skills.

Research Assistant

May 2021 – Present

Behavior Analytics and Modeling Lab, University of Waterloo

- Conducted an evaluation of the Chicago Police Department's Bureau of Detectives' **Area Technology Centers**
- 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
- Developed features on a case management tool using **React, Node.js, Flask, and MySQL**, focusing on data visualization and organization.

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 – Aug 2022

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

EstateFinder | *React, Express.js, Node.js, MongoDB, JWT*

- Built a Modern Real Estate Marketplace from scratch using the **MERN stack (MongoDB, Express.js, React, Node.js)**, incorporating **JWT authentication and Redux Toolkit**.
- Implemented **JWT, Firebase, and Google OAuth** for secure user access, along with real-time **CRUD** operations, image uploads, and an advanced search functionality.
- Deployed and optimized the application on **Render**, including dynamic components like image sliders and contact functionalities, resulting in a fully functional and user-friendly marketplace.

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.

EDUCATION

University of Waterloo

Candidate for Bachelor of Applied Science in Management Engineering

Waterloo, ON

Graduating April. 2028