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ROHINI DESHMUKH

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EDUCATION

University of Massachusetts, Boston

Master of Science in Information Technology | GPA 3.7/4

Teaching Assistant at UMass, Boston, for courses such as 'Introduction to Computing Engineering using Python'.

Boston, MA

September 2022 - May 2024

University of Mumbai, Maharashtra

Bachelor of Engineering in Information Technology | GPA 7.87/10

Mumbai, India

June 2018 - May 2021

SKILLS

Courses: Data Structure and Analysis, Database Management Systems, Cloud Computing, Object Oriented Prog., Design Patterns, Operating System (Unix/Linux), Artificial Intelligence, Machine Learning, Computer Vision, Deep Learning, Natural Language Processing User Interface Design, GUI, Computer Science Fundamentals, RDBMS

Frontend: HTML, CSS, JavaScript (ES6+), UI/UX, React.js, Angular, Typescript, Streamlit.py, xtk.js, Three.js, WebGL, SQL

Backend: Java, Go, Python (Django, Flask), PyTorch, TensorFlow, Express.js Nodejs, C/C++, REST APIs, JSON, Struts, XML

Databases: MySQL, Postgres SQL, MongoDB (NoSQL), Snowflake, Google Cloud Platform, AWS

Technologies: Git, Docker, Kubernetes, Jenkins, Jira, Confluence, CI/CD, Scrum, Agile methodologies

EXPERIENCE

Software Engineer (Research Fellowship) | Machine Psychology | UMass Boston, MA

September 2023 - Present

- Conducted research on **JavaScript** based medical image processing libraries such as Cornerstone.js, Niivue.js, OpenSeaDragon.js, Papaya.js and XTK.js that helps us visualize the high-resolution medical scans on 2D and 3D web canvas.
- Developed and presented project PowerBoost at **BrainHack 2024**, leading a three-person cross functional team to enhance the functional capabilities of the UI widget and maintaining the code base using version control tools such as GitHub.
- Co-authored and submitted a paper at **IEEE VIS 2024** aiming to provide web plugin for image processing.

Advisor: [Prof. Daniel Haehn](#) / [mpsy lab](#)

API Integration Intern | Calix | San Jose, California

May 2023 - August 2023

- Assisted in the integration of third-party **APIs** using **Flask**, enhanced data flow and application functionality.
- Developed **RESTful API** endpoints to process http requests, conducted testing to verify integration success, utilized **SQL** for database management tasks, including querying and updating data and created documentation for API integrations.

Software Developer | Germin8 | Mumbai, Maharashtra

June 2021 - July 2022

- Collaborated in revamping the user interface of Germin8's social media analytics platform by migrating from traditional front end to **React** framework, enhancing software development life cycle resulting in a 30% increase in user engagement.
- Developed a scalable backend service using **Node.js** by implementing data pipeline and optimizing database interactions, ensuring that our services could efficiently handle up to 200,000 requests per day.
- Wrote comprehensive unit and integration tests, achieving 100% test coverage for stable, even as new features were added.

PROJECTS

Floating UI Widget for web browser with expanding and collapsing action menu:

- Designed a project [PowerBoost.js](#), a floating UI widget with an expand and collapse action menu with a responsive design, compatible with any browser via JavaScript injection, featuring a search recommendation system listing all possible Boostlets.
- Developed an editor mode using **Ace.js**, allowing users to compile and run **JavaScript** code, and integrated Powerboost.js with [Boostlet.js](#) to display Boostlets according to their categories, following a MVC architecture and **OOP** principles.
- Utilized Node Parcel for bundling the source code into a minified JS file, providing easy installation using a bookmarklet for users to dynamically load the script on any host website by dragging and dropping PowerBoost onto the bookmark bar.

Visualize a 3d model of the human heart in response to the ECG signals:

- Developed a project [Cardiowave](#), an ECG visualization tool utilizing **Three.js** to render a 3D model of the human heart on a web browser, enabling interactive and realistic heart visualizations.
- Researched and evaluated various 3D visualization canvases, including **xtk.js**, **three.js**, and **WebGL**, to determine the most effective approach for rendering the heart model and accurately visualizing ECG data.
- Implemented an interface that allows users to drop ECG data files into a browser drop zone, extracting and analyzing P, Q, R, S, and T peaks, and dynamically pumping heart atriums and ventricles based on the analyzed peaks, transitioning from Python libraries (**Biosppy.py** and **NeuroKit.py**) to a full **JavaScript** implementation for enhanced performance and flexibility.

Web scrapping and analysis tool used to perform 4 types of analysis:

- Extracted extensive financial data from [Yahoo Finance](#), including stock prices, historical data, and financial news. The data was then subjected to detailed **descriptive** and **regression** analysis to uncover patterns and trends for data analytics.
- Utilized **Matplotlib** to create visualizations, such as line plots, and performed **text** analysis to generate word clouds, providing a visual representation of the most frequently occurring words in financial news articles.
- Using the **NLTK** library, the project conducted **sentiment** analysis on Yahoo Finance news articles. This analysis revealed a strong correlation between stock prices and the sentiments expressed in the news.

HACKATHONS

BostonBridge 2023 | UMass Boston (Deployed ML model on web addressing the problem related to Brain Tumor Detection)

Nov 2023

BrainHack 2024 | UMass Boston (Led a team of 3 developers to enhance the capabilities of project PowerBoost)

Feb 2024