Harsh Jha

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EDUCATION

University of Ottawa, Ottawa, ON, Canada   Sept 2024 – May 2026
M.S. Computer Science Research with Specialization in Applied AI

University of California - Santa Cruz, Santa Cruz, California, US   Sept 2021 – Jun 2024
B.S. Computer Science

TECHNICAL SKILLS

Languages: JavaScript, HTML, CSS, Java, C/C++, Python   **Web Frameworks**: React, React Native, Flask

Tools: Git, PowerBI, TensorFlow, PyTorch, Vercel, Docker   **Database/Cloud**: SQL, PostgreSQL, AWS, Firebase, Neo4j

WORK EXPERIENCE

University of Ottawa, Ottawa, ON   Sept 2024 – Present
Research Assistant
- Conducting research on query optimization using Machine Learning techniques under the M2oDA research lab
- Collaborating with lab members to develop new methods for improving query processing, cost models, and database efficiency
- Contributing to academic publications and preparing materials for presentations at workshops and conferences
- Aiming to implement ML models for query optimization with real-world impact

UC Santa Cruz Police Department, Santa Cruz, CA   Jan 2024 – Jun 2024
Full Stack Developer: React, Material UI, Javascript, Microsoft PowerBI Hack, TensorFlow, Mapbox
- Developed a comprehensive crime dashboard using PowerBI to visualize crime data
- Enabled the police to track crime trends and facilitate decision-making and improved resource allocation by 35%
- Utilized PostgreSQL to store structured crime data, classifying cases into offense categories for better analysis
- Visualized crime data trends through Power BI, including dynamic charts and interactive maps with Mapbox and ArcGIS
- Integrated real-time crime updates from the UCSC PD public database to keep dashboard information current
- Developed an LSTM time series model to forecast weekly crime counts and frequencies for each crime type
- Integrated the forecast data into PowerBI's Q&A feature, enabling interactive querying and dynamic visualizations

Petals Event and Decor LLC, San Jose, CA   July 2023 – Aug 2023
Front End Developer: React, HTML & CSS, JavaScript, Figma,
- Developed Petals' responsive website using Material UI & React, optimizing loading speed and increasing responsiveness and professional branding contributing to 100+ additional clients within 6 months
- Integrated Sanity CMS with user authentication, allowing only the admin to securely manage website content, enabling independent updates without external assistance

LEADERSHIP/VOLUNTEER EXPERIENCE

Google Developer Student Club | *Front End Developer*   Oct 2021 – Mar 2022
- Collaborated on a GDSC Solution Challenge project for UN Sustainable Development Goals, with a focus on Sustainable cities, communities, and good health
- Created the Soteria website to address safety concerns in Santa Cruz, providing users with safe travel routes
- Utilized Javascript for parsing JSON file and integrating mapping libraries like Mapbox GL JS and Google Maps Geolocation API to create interactive and precise maps

PROJECTS

Study Link   Sep 2023 – Dec 2023
Full Stack Developer: React, AWS Amplify, DynamoDB, Material UI
- Developed a platform enabling students to create and join study groups, enhancing collaborative learning in remote environments
- Implemented features for users to share notes, chat, manage profiles, and send group announcements and invitations
- Utilized React for the front end and AWS services (S3, DynamoDB, API Gateway, Lambda) for the backend infrastructure
- Addressed challenges in AWS workflows and sprint management while employing Scrum methodologies for effective project management