

HARSHDEEP PLAHA

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EDUCATION

University of Missouri - Kansas City
Bachelor's, Computer Science

January 2020 - December 2024
GPA: 3.83

PROFESSIONAL EXPERIENCE

Q2

Software Engineer Intern

Austin, TX, USA
May 2024 - August 2024

- Upgraded adapters within distributed systems using Kessel, Q2's proprietary Python-based request handling framework moving over 45 financial institutions to the latest technology, to Kessel 2.0 following Agile SDLC working with cross functional teams.
- Enhanced system functionality, observability, and monitoring capabilities by implementing Kessel 2.0 methods and new event-driven logging features using advanced internal logging mechanisms and REST APIs.
- Gained familiarity with container orchestration and deployment technologies, identified necessary changes in deployment configs Terraform (HCL files) for the switch to Kessel 2.0, and utilized Docker in the development and deployment processes.
- Ensured 100% reliability in remote environments by executing comprehensive testing of containers using quality assurance techniques, including unit and integration testing methods to validate performance.
- Optimized the CI/CD deployment process, reducing deployment time by 25% by leveraging Jenkins and Nomad for automated DevOps workflows, enhancing the efficiency of financial institutions utilizing Kessel services.

University of missouri kansas city

Undergraduate Research Assistant

Kansas City, MO, USA
October 2023 - July 2024

- Achieved a 30% improvement in predictive accuracy by leading data science and machine learning initiatives using Python, Keras, and TensorFlow in a ozone research project.
- Achieved over 90% accuracy in ozone concentration prediction by contributing to the design and development of a prototype model using advanced neural network architectures, including RNNs and LSTM units.
- Increased the dataset's temporal resolution by 50% by expanding the model's capabilities to global scales and decadal timeframes, enabling comprehensive analysis of ozone's impact on climate and health.
- Enhanced the VR simulation's interactivity and user experience by 40% by engineering and implementing a speech-to-text and sentiment analysis pipeline in Unity.
- Demonstrated interdisciplinary teamwork and technological innovation by building scenes and implementing game logic for a VR simulation project for Meta Quest Pro in collaboration with the University of Miami.

Defence research and development organisation of Inda

Software development intern

Bangalore, KA, India
May 2023 - July 2023

- Developed and deployed a robust, cross-platform application to enable device control, automation and monitoring using React Native and Agile methodologies.
- Enhanced user experience and operational efficiency by building an intuitive user interface for a home automation system using HTML, CSS and TypeScript and React Library D3.js for data visualization .
- Reduced latency by 20% by engineering a robust backend solution utilizing DynamoDB for real-time data management from sensors.
- Integrated ESP32 Wi-Fi module for automated device control, showcasing innovative problem-solving in IoT applications and improving device connectivity.

Supreme Tech

Front-end Developer Intern

Nagpur, MH, India
May 2022 - July 2022

- Enhanced user engagement by 20% by leading the design of user-centric interfaces for single-page applications using Figma, aligning with modern web standards.
- Improved navigability and user satisfaction by 30% by innovating a user experience pathway for the education-tech platform through user research and applying design patterns.
- Contributed to the project's success in meeting key deliverables by developing responsive and dynamic web solutions using Angular, adhering to design patterns and the development life cycle.

PROJECTS & OUTSIDE EXPERIENCE

Development of ML Techniques for Tropospheric Ozone Prediction

Research Assistant

Kansas City, MO, USA
October 2023 - July 2024

- Achieved high-resolution ground-level ozone predictions by developing and expanding a prototype model using recurrent neural networks (RNNs) and long short-term memory (LSTM) architectures, leveraging Kubernetes and Docker for containerization and scalability.
- Improved model speed and accuracy by implementing recurrent neural networks (RNNs) and long short-term memory (LSTM) architectures, and utilized Git for version control and collaborative development.
- Enabled comprehensive ozone predictions by utilizing NoSQL databases like MongoDB and Cassandra for managing large datasets, and Apache Airflow for orchestrating data pipelines.
- Optimised the object detection and classification pipeline of a computer vision project using Yolo object detection models.

VR Simulation for Child Behavior Analysis

Research Assistant

October 2023 - July 2024

- Built and designed dynamic scenes for various scenarios, implementing game logic to create interactive and responsive environments, aligning with the need for geometric and semantic representation of real-world spaces in AR/MR applications.
- Developed a real-time speech-to-sentiment analysis pipeline using hugging face API and Meta voice SDK that enhanced character interactivity by enabling natural language processing and emotional response analysis, contributing to improved user engagement and immersive experiences in VR.
- Integrated multi-view geometric modeling techniques to ensure accurate representation of different camera viewpoints, improving the realism and depth of the VR simulation.

SKILLS

- Languages:** Python, JavaScript, HTML/CSS, Java, C/C++, Javascript, R, TypeScript, C#, Go, iOS/Swift, XML
- Databases:** MySQL, NoSQL, Firebase, MongoDB, SQL, Postgres, DynamoBD
- Frameworks and Libraries:** React.js, React Native, AngularJS, Pytorch, Scikit Learn, Pandas, NumPy, Keras, Tensorflow, OpenCV, OpenAI api, .NET, Flask, Node.js, Spring, GraphQL
- Tools:** PowerBI, Tableau, Figma, Kubernetes, MATLAB, Unity, Git, Microsoft Azure, Jenkins, Nomad, Docker, NPM, Linux/Unix, Apache Spark, REST APIs, Terraform, Excel, Atlassian, Salesforce