Shreyas Yadav

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Education

Masters of Science Computer Science Aug 2024 – May 2026
University of San Francisco (3.75/4.0 GPA)

Experience

Software Engineer Intern, American Bureau of Shipping Jan 2023 – Jun 2023

- Developed a full-stack employee rating platform using **React** and **Spring Boot**, enabling **400+** employees to submit and review performance data, reducing manual effort and improving processing time by **35%.**
- Engineered **REST APIs** for data synchronization between **Oracle Database** and **IBM Maximo** in real-time, improving report generation efficiency by **40%.**

Web Developer Intern, Starktech Ventures Pvt Ltd Oct 2021 – Apr 2022

- Developed a full-stack e-commerce platform with **Laravel** and **Javascript**, reducing page load times by **60%** and driving a **25%** lift in user engagement.
- Implemented secure **Stripe** integration handling **50+** monthly transactions, increasing conversions by **20%** and reducing cart abandonment.

AI Project

Agent Reasoning Alignment Study Link (May-2025)

- Conducted systematic evaluation of LLM agent reasoning across **500+ automation scenarios**, discovering **23% degradation** in multi-step reasoning chains and identifying critical alignment failures in tool selection consistency and sequential decision-making processes.
- Developed novel evaluation framework using **LlamaIndex** and **Arize Phoenix** to measure agent reasoning quality, revealing coordination failures in **15%** of multi-agent scenarios and systematic bias in complex task decomposition workflows.
- Architected automated safety assessment pipeline for GitHub agent architectures, enabling reproducible evaluation of alignment properties and real-time detection of reasoning breakdowns across single-agent and multi-agent systems with comprehensive failure mode documentation.

LLM Security & Safety Analysis

- Investigated potential misalignment risks and security vulnerabilities in production LLM systems through systematic analysis of failure modes, prompt injection attacks, and output steering challenges in generative AI applications.
- Studied research papers on LLM architecture, alignment techniques, and evaluation methodologies with focus on scalable oversight, robustness testing, and safety considerations for autonomous AI systems.

Technical Projects

EasyShare - Real-time Collaboration Platform Link (July-2025)

- Developed full-stack real-time collaboration platform using **Next.js, React, and TypeScript** with **Socket.IO** integration, supporting **10+** concurrent participants with sub-second response times.
- Implemented AI-powered receipt analysis using **OpenAI API** and **Firebase Storage** to automatically extract restaurant bill details, reducing manual data entry by **90%** for bill splitting scenarios.
- Built scalable backend architecture with **Redis caching, Clerk authentication, and RESTful APIs**, maintaining data persistence across user sessions.

Autonomous Vehicle Navigation System

- Developed computer vision-based autonomous navigation system using **OpenCV** and **Python**, implementing **lane detection algorithms** with Canny edge detection and Hough line transforms to achieve **95%** accuracy in lane boundary identification.
- Engineered real-time steering control system with **PID controller** and **image processing pipeline**, enabling autonomous path following with **30 FPS** video processing and sub-100ms response times for steering adjustments.
- Implemented advanced computer vision techniques including **perspective transformation**, **color space conversion**, and **region of interest masking** to handle varying lighting conditions and road curvatures with robust lane tracking performance.

Quality of Service Network Simulations Link (April-2025)

- Developed comprehensive **NS-3** QoS simulation framework using **C++**, implementing **Strict Priority Queuing** and **Deficit Round Robin** scheduling algorithms with **IPv4** packet classification and configurable traffic classes.
- Engineered packet filtering system with **header analysis**, **port-based routing**, and **subnet filtering** to enable **traffic shaping** and bandwidth allocation with comprehensive performance evaluation metrics.

Hotels Management System (Dec-2024)

- Developed full-stack Java web application implementing **Java 17, Maven, MySQL, and Jetty server** with secure user authentication, CRUD operations, and **REST** API endpoints for hotel search functionality.
- Engineered interactive hotel discovery platform with **MapBox** integration and **Bootstrap 5** responsive design, enabling location visualization with comprehensive **rating system** and **SHA-256 password hashing**.

Technical Skills

Generative AI: LlamaIndex, ADK(Agent Development Kit) ,ChromaDB, Agent Evaluation, Safety Testing, LLM Fine tuning
Programming: Python, C++, Java, JavaScript, TypeScript, SQL, PHP, Assembly RISC-V
Web Technologies: React, Next.js, Angular, Node.js, Express.js, Spring Boot, Laravel, REST APIs, Socket.IO
Data & Tools: MySQL, Oracle DB, Firebase, Redis, Git, Docker, Linux, Postman, GCP, NS-3 Simulator
Coursework: Software Development, **Generative AI**, Algorithms, Cloud Computing, Computer Networking