ROJESH KOIRALA

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SOFTWARE ENGINEER

Software Engineer with comprehensive experience in full lifecycle development, from design to deployment. Proficient in creating scalable and efficient software solutions, with expertise in machine learning, data visualization, and cloud architectures. Recognized for leading complex projects with precision and delivering impactful results. An entrepreneurial thinker with proven collaboration, communication, and leadership abilities, driving success in both team-oriented and independent environments.

AREAS OF EXPERTISE

Solutions Architect | Project Management | Project Implementation | Machine Learning | Data Visualization | Design, Coding and Testing

TECHNICAL SKILLS AND CAPABILITIES

Languages: Python, Kotlin, C++, Java, Javascript, Swift
Databases: MySQL, PostgreSQL, Elasticsearch, Redis
Technologies: AWS, Django, Tornado, Node

WORK EXPERIENCE

Capital One, Plano, TX   **November 2023 – present**
Senior Software Engineer
Led feature design, development, and compliance efforts for the File Transfer team, ensuring secure, reliable, and compliant transfer of highly sensitive files between internal teams, external banks, and regulatory bodies such as the FDIC. Directed the design and implementation of advanced anomaly detection mechanisms to intercept malicious or unauthorized file transfers without direct file access. Oversaw incident response and operational support efforts to ensure compliance, mitigate risks, and manage production updates while maintaining stringent encryption, storage, and access controls.
- Led a comprehensive audit of monitoring infrastructure, addressing gaps, implementing end-to-end service monitoring, and refining alert configurations to minimize false positives while ensuring complete accuracy.
- Collaborated with customers to address pain points, develop alert management strategies, and resolve recurring high-incident alerts with tailored solutions.
- Designed and implemented a serverless AWS-based orchestrator to securely transfer files through malware scanning and anomaly detection systems, streamlining integration between external sources and internal infrastructure.

Amazon, Austin, TX   **March 2017 – March 2023**
Software Engineer II
Led the design and development for an overarching data gathering, analysis, and visualization platform spanning the entire Amazon catalog to predict and address product safety issues and dangerous goods.
- Identified and removed thousands of highly dangerous products from circulation, processing billions of items to enhance customer safety and compliance.
- Designed and implemented an active learning framework to improve text-based processing, enabling the continual identification of popular and potentially hazardous items.
- Developed and optimized machine learning models for backend infrastructure and UI, including test suites and monitoring platforms, to streamline safety predictions and reporting.
- Researched innovative natural language processing techniques to process product safety using text-based descriptors, presenting findings to multiple teams across Amazon, as well as conferences such as MARS and NeurIPS.
- Created a fully native AWS architecture to develop a scalable data processing ecosystem, enabling organization-wide predictions and visualization of product safety data.

Led the implementation of a global platform to report, process, and store safety incident data across Amazon Fulfillment Centers, ensuring scalability and reliability for worldwide operations.
- Designed a secure, fully native AWS architecture to efficiently handle employee data and incident reporting, optimizing data processing and visualization.
- Spearheaded the migration of software and data from external EHS systems, saving over $1M in fees and reducing thousands of employee hours.
- Developed advanced features for analyzing safety incidents through time-series and text-based methods, enabling proactive identification of recurring patterns. These insights drove significant changes to Fulfillment Center workstation layouts, reducing future safety risks.
- Collaborated with cross-functional teams as a Security Certifier to validate application security, identify potential threats, and implement mitigation strategies.
- Played a key role in organizational growth by leading hiring efforts, conducting dozens of interview loops, and earning recognition as a bar raiser.

Principal Development Group Consulting, Los Angeles, CA   **June 2015 – August 2015**
Software Engineer
Optimized database backend for Sony Pictures Entertainment, improving query efficiency by 30% across a 100-node database infrastructure.

Swiss Re Corporate Solutions, Overland Park, KS   **June 2014 – August 2014**
Software Consultant
Developed and enhanced business software and data analysis methods using IBM Watson, producing reports and reducing manual workloads by up to 60%.

Harvey Mudd College, Department of Physics, Claremont, CA   **July 2012 – August 2012**
Algorithmic Developer
Worked on enhancing optical absorption in thin-film cells. Rewrote the algorithm for finding the highest paths of light propagation. Increased its efficiency by up to 300% by translating the code from Igor to C++ and optimizing the search and sort algorithms.

PROJECT EXPERIENCE

Arbori, Austin, TX   **March 2023 – present**
Built an orchestration workflow for sourcing, inventory management, and supply chain optimization tailored for landscaping plants, ensuring seamless integration between contractors and suppliers.
- Designed a scalable serverless infrastructure to efficiently process contractor intake submissions and supplier inventory updates, enabling real-time data synchronization and operational efficiency.

weCOVR, Austin, TX   **August 2020 – December 2020**
Designed and developed a platform enabling businesses to manage contact tracing and COVID protocol awareness, integrating workflows for customer data management, payment processing, check-ins, and exposure notifications.
- Built infrastructure to seamlessly integrate with business websites and database systems, enabling accurate customer tracking and effective contact tracing over defined time periods.

Pocket Politics, Dallas, TX   **January 2016 – March 2017**
Created a multi-platform service for unified access to political news and information, enabling users to explore sponsored legislation, voting records, and analyses such as political leanings and bipartisanship tendencies for representatives at all government levels.
- Designed a system to consolidate data from various government sources, facilitating efficient document management and advanced search capabilities.

EDUCATION

Bachelor of Science, Physics and Film Studies, Harvey Mudd College, Claremont, CA – 2015
Founder and President, Astronomy Club and Chess Club. Dean's List