POOJA KHANAL

SOFTWARE DEVELOPMENT ENGINEER

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Experience

Software Developer Nov 2023 – Present

Freelance

- Developed and maintained tailored web solutions for small and local business clients, implementing interactive features like photo galleries, state-specific blog maps, and Google Maps API integration
- Enhanced user engagement through custom content management, SEO strategies, and responsive design
- Created a travel app using Java Springboot and React NextJS that auto-generates distances and weather information, providing users with accurate travel data in real-time
- Created comprehensive technical documentation and detailed specifications for ongoing web solutions to support future public deployment and maintainability

Quality Assurance Engineer Sep 2021 – Oct 2023

America's Collectibles Network - Jewelry Television *Knoxville,TN*

- Engineered a Spring-based full-stack test automation framework for .NET based eCommerce platform achieving 40% code coverage in Java using Selenium and Cucumber
- Implemented Behavior-driven development (BDD) using Cucumber tests saving 40 hours/week manual effort and accelerating regression cycles by 50%
- Performed detailed system analysis and requirements gathering sessions to translate business needs into actionable technical specifications
- Executed REST API testing and validated SQL/NoSQL databases to ensure data integrity using PostMan, SoapUI
- Identified and fixed over 1000 code smells and multiple security issues using SonarQube
- Achieved a 30% reduction in deployment time by integrating automated unit, integration, and regression tests within the Jenkins CI/CD pipeline
- Attained a 20% faster project fulfillment and delivery by collaborating with stakeholders and teams to analyze requirements, conduct product demos, and translate needs into technical solutions

Graduate Research Assistant Aug 2019 – Aug 2021

Information Technology and Systems Center - University of Alabama in Huntsville *Huntsville,AL*

- Architectured and implemented cloud-based SaaS projects in AWS for a NASA-funded research center, specializing in big data solutions for satellite imagery
- Designed and implemented cloud infrastructure and APIs to store, partition, and query large-scale precipitation data (CAPRi Project)
- Designed and implemented real-time data visualization plots using Angular JS, providing dynamic insights
- Developed a comprehensive testing framework achieving 95% test coverage for API integration and UI
- Improved Amazon Athena query performance by 350% by benchmarking and adopting Parquet storage format
- Created and managed AWS-based cloud with infrastructure as code in Terraform for HPC research
- Documented APIs with OpenAPI specifications and generated interactive docs using Swagger
- Implemented real-time visualizaitons in a 3D data visualization platform using AngularJS that integrates and visualizes diverse NASA datasets (FCX Project)
- Supported multiple publication for projects by executing software benchmarks, analyzing results, and contributed to manuscript contents

Associate Quality Assurance Engineer Oct 2017 - July 2019

Logpoint Nepal Pvt Ltd *Nepal*

- Developed automated test scripts with Selenium WebDriver, achieving a 40% increase in testing efficiency and a 30% boost in defect detection rates for web applications
- Integrated testing with CI/CD processes using Jenkins, resulting in a 35% reduction in average delivery times, to streamline deployment and software updates
- Collaborated with cross-functional teams to refine testing requirements and expand test coverage
- Strategically deployed diverse testing methodologies across development phases: black box for initial UX assessment, white box for code analysis, smoke tests for post-integration checks, and regression testing to ensure ongoing functionality, enhancing overall web application quality
- Managed and streamlined Agile project management processes, including comprehensive backlog grooming, strategic sprint planning and mentoring new hires

Technical Volunteering

United Nations Development Project (UNDP)

Instructor/Tutor — *Ethiopia*

- Conducted hands-on workshops and training sessions on programming fundamentals and advanced concepts, software development practices, and practical implementation
- Developed instructional materials, including comprehensive tutorials, presentations, and exercises to facilitate effective learning

Cooperative Finance

Trainer — *Nepal*

- Taught fundamental computer skills to women in financial cooperative, empowering them with digital literacy to enhance their personal and professional opportunities.
- Designed and conducted training programs focused on practical tools such as Microsoft Office, internet usage, cybersecurity and communication platforms.

Technical Skills

Languages: Java, Python, JavaScript, C/C++, SQL, HTML/CSS
Frameworks: Spring, Flask, React, Angular, .NET
Developer Tools: Linux, Git, Docker, VS Code, SVN, Jenkins, Terraform, Jira, Confluence, Maven, Swagger
Cloud Technologies: AWS (Lambda, DynamoDB, S3, Boto3, API Gateway, Athena, Glue, EC2, IAM), Google Cloud Platform, Portainer, Kafka
Database Management: PostgreSQL, PL/SQL, MongoDB, SQL Server, DynamoDB
Testing Tools: Selenium, Cucumber, Gherkin, Postman, TestNG, Jmeter, SonarQube, pytest

Education

University of Alabama in Huntsville — Aug 2019 – Aug 2021
Masters of Science in Computer Science — *Huntsville, AL*

Institute of Engineering, Tribhuvan University — Oct 2013 – Sep 2017
Bachelors in Electronics and Communications Engineering — *Nepal*

Publications

Koppola, S.[et al, including Khanal, P.](2021) Cloud-based Analytic Framework for Precipitation Research (CAPRi) to Enhance the Spatial Resolution of GPM Data. AGU Fall Meetings.
Selvaraj, N.[et al, including Khanal, P.](2021) Advancing precipitation research with a deep learning framework. AGU Fall Meetings.
Beck, J.[et al, including Khanal, P.](2021) Advancing Precipitation Research with Cloud-based Technologies. AGU Fall Meetings.