

# PRADEEP SINGH

ARCHITECT & ENGINEERING LEAD

+1-201-884-2059  
pradeep.ncst@gmail.com  
519 Central Ave Jersey City NJ 07307 USA  
[www.linkedin.com/in/pradeepsingh07/](https://www.linkedin.com/in/pradeepsingh07/)  
<https://github.com/Pradeep21oct/>

## PROFESSIONAL COMPETENCIES

- Led the design and development of a high-performance payments' application using Spring Boot 3.x, Java 17+, and engine architecture, driving the processing of 50M+ transactions/daywhile reducing maintenance efforts and operational costs by 20%.
- Led the creation of a scalable framework with Spring Boot 3.x and Java 17 to efficiently ingest events from multiple sources (Kafka, IBM MQ) and publish to downstream systems (MQ, Kafka, S3, Snowflake, DB), optimizing data flow and improving efficiency by 30%.
- Directed the development of multiple microservices from scratch, ensuring scalability, reliability, and seamless integration with enterprise systems.
- Led the creation of a rule engine using Java and Spring to provide real-time payment updates to the SWIFT network, supported by 5000+ JUnit test cases, achieving 90+% SonarQube coverage.
- Excelled in designing and leading the development of multithreaded applications with Spring Boot, increasing application throughput by 40% for high-volume data processing.
- Oversaw the development of secure REST APIs using Spring Boot, Spring Security OAuth2, and Spring Cloud, ensuring compliance with industry security standards.
- Directed the design and development of data migration utilities with Java, Spring Batch, and Python to migrate 500+TB of data from DB2, MongoDB, Oracle, S3, Vertica, and Hadoop to Snowflake on Azure, slashing storage costs by 50%.
- Led the implementation of a data curation layer in Snowflake using DBT and Airflow, facilitating analytics and reporting across 40+ applications.
- Managed the design and implementation of data-intensive, scalable applications using event-driven architecture, Elasticsearch, MongoDB, Kafka, and IBM MQ, improving system performance by 35%.
- Championed the adoption of Agile methodologies, successfully leading cross-functional teams and acting as a POD Lead for 7+ years in a platform operating model, improving project delivery speed.
- Oversaw the creation and management of CI/CD pipelines using GitLab, enabling seamless cloud deployment and reducing deployment errors by 30%.
- Led the migration of 50+ applications from on-prem to the cloud, resulting in a 30% reduction in infrastructure costs.
- Contributed 12+ years of expertise in the financial services industry, successfully delivering mission-critical solutions for payment processing, cybersecurity, and data management.
- Enhanced development efficiency by 25% through the strategic use of GitHub Copilot, driving productivity across teams.
- Successfully led cross-functional teams across India, Poland, and the UK, providing technical guidance to 30+ developers, reducing technical debt by 30%, and ensuring timely delivery of complex projects.
- Deeply familiar with the payment Fix income trading (FIX) and mortgage domain, overseeing key functions such as data services, risk management, global and real-time payment systems (Swift GPI, NACHA, RTP), payment lifecycle processes, and innovations in digital currency and traditional frameworks (FED and CHIP checks).

## **WORK EXPERIENCE**

**Role:** Vice President

**BNY Mellon, New York | July 2022-Present**

**Project Summary:** Merlin is a next-generation data intelligence platform designed to transform scalability and resilience in business ecosystems seamlessly. It streamlines payment message interception while preserving the integrity of original instructions. By effortlessly integrating with internal applications, market gateways, and financial utilities, Merlin provides a unified, accessible repository of transactional data for both internal and external stakeholders.

### **Roles and Responsibilities:**

- Architect and deploy microservice solutions, enforcing security protocols that reduced vulnerabilities by 40%, while optimizing deployments through containerization initiatives.
- Develop event-driven systems using microservices, and create RESTful web service clients with Spring Boot for private cloud deployments.
- Champion system reliability improvements, leveraging AppDynamics-Docker integration with advanced caching mechanisms and robust exception handling.
- Elevate team performance as a Scrum Master, streamlining agile methodologies and enhancing technical capabilities for superior project outcomes.
- Revolutionize deployment processes by designing and implementing Python-based automation solutions, ensuring efficiency, and maintaining system architecture.
- Lead technical solutions for cross-functional teams, ensuring seamless multi-system integration, L3 production support, and high-quality software delivery.
- Engineer Kafka modules to efficiently manage message publication and consumption, while integrating EHC cache for caching solutions and runtime exception frameworks.
- Deliver high-quality software iteratively by following Agile methodologies (POD model), conducting Scrum meetings, and utilizing Jira for defect tracking and sprint planning.
- Facilitate team collaboration as a POD lead, running Scrum calls and driving projects toward successful completion.
- Ensure code quality and security through JUnit tests (with Mockito), Veracode, and SonarQube scans, achieving a 40% reduction in vulnerabilities.
- Automate CI/CD pipelines by creating Docker images, Jenkins jobs, and deployment tools, optimizing production deployment efficiency.
- Manage version control and integration with GitLab, performing bug fixes and code merges to maintain software integrity.

**Tools & Technology:** Java 17, Spring Boot 3.x, AWS, JPA, Apache Strom, Elastic Search, MongoDB 7.x, Snowflake (Azure), Microservices, IBM MQ, Oracle, Docker, SonarQube, Veracode, REST API, Spring Batch, S3, Cloud (private), Agile, GitLab, CICD Pipeline, Jira, SWIFT, JSON, XML, Python, Junit, Confluent Kafka, Oracle Exadata, GitHub copilot, Agile Scrum.

**Role: Lead Developer**

**UBS, Weehawken, NJ | Dec 2021-Jun 2022**

**Project Summary:** The FA Portal consults work with Single Sign-On (SSO) for streamlined access to key functionalities, including information on new applications, loans in progress, and funded loans with indicative rates. The portal categorizes loan details to enhance organization and features tools like the Refer a Client Wizard, loan conditions, loan statuses, and good faith estimates, all aimed at delivering an improved client experience. It also focuses on better structuring information on the main portal page to enhance usability while increasing transparency throughout the mortgage process.

**Roles and Responsibilities:**

- Led all phases of the SDLC, from requirements gathering and design to development, customization, and deployment, ensuring robust application functionality.
- Engineered scalable, high-performance web applications using Spring MVC and modern JavaScript frameworks, enhancing user experience and system reliability.
- Spearheaded UI/UX improvements, delivering intuitive interfaces while adhering to strict security protocols.
- Developed and implemented application architectures, leveraging J2EE design patterns such as MVC, Singleton, and DAO for optimal performance.
- Enhanced cross-functional collaboration, aligning technical solutions with business goals, and delivering successful application deployments.
- Streamlined development workflows, managed version control with SVN, and optimized CI/CD pipelines using Jenkins for seamless integration.
- Designed and developed JSPs, Servlets, and custom tags, incorporating client-side validation with JavaScript and jQuery for enhanced interactivity.
- Conducted code reviews, implemented unit testing with JUnit, and applied Fortify and Sonar scans, resulting in reduced vulnerabilities and improved code quality.
- Interfaced with stakeholders to gather requirements, refine architecture, and ensure alignment with business processes, following Agile methodologies.
- Architected enterprise web applications using Spring MVC, implementing design patterns and custom JSP components while leading development teams through SDLC phases
- Optimized application performance through strategic implementation of client-side validations and jQuery frameworks, enhancing user experience and system efficiency
- Developed comprehensive technical documentation and system diagrams using Rational Rose, ensuring clear communication of architecture decisions
- Pioneered modernization initiatives for legacy systems, reducing complexity through implementation of contemporary JavaScript frameworks and MVC architecture
- Created class diagrams and sequence diagrams using Rational Rose and prepared high/low-level design documents
- Provided L3 production support, bug fixing, and performance optimization to maintain high application reliability.

**Tools & Technology:** Spring Boot framework, Core Java 8, Pivotal Cloud foundry, Ibatis, jQuery, eclipse, DB2, Unix shell scripts, Java script, HTML, JSP, Google API, CSS, Web Service, SOAP, XML, XHTML, Jira, IBM data Studio, fortify scan, Sonar, DB2. Ajax, Maven, log4j, J2EE Design Patterns, HP ALM, Quality center

**Role: Solution Architect****Cognizant, Weehawken, NJ | May 2012-Mar 2019**

**Project Summary:** Project Summary: The purpose of Funding Automation project to stream line and automate UBS mortgage funding and settlement process between PHH and UBS, Current process evolves originally over the years and required operational improvement as UBS mortgage ramps up its origination value. New find automation process compromise of 3 phase Integration, Decision, and processing.

- Involved in all phases of SDLC, including requirements collection, design & analysis, development, and customization of the application.
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- Created class diagrams and sequence diagrams using Rational Rose and prepared high/low-level design documents.
- Conducted code reviews and provided guidance to team members
- Led end-to-end software development lifecycle, architecting robust web applications using Spring MVC, while mentoring junior developers and establishing coding standards
- Streamlined development processes by implementing custom JSP tags and optimizing client-side validations, enhancing application performance and user experience
- Spearheaded modernization of legacy systems through strategic implementation of jQuery and JavaScript frameworks, reducing system complexity
- Orchestrated cross-functional development initiatives, conducting thorough code reviews and providing technical leadership to ensure project success
- Crafted comprehensive technical documentation including class diagrams and sequence diagrams, ensuring clear communication of system architecture
- Led enterprise-level web application development using Spring MVC, implementing robust architecture patterns and establishing comprehensive coding standards
- Modernized legacy systems through strategic integration of jQuery frameworks, reducing technical debt and improving system maintainability
- Facilitated knowledge transfer through mentorship programs and code reviews, elevating team capabilities and ensuring consistent development practices

**Tools & Technology:** Java 11, Spring MVC 3.5 JSP, HTML, XML, Servlets, Java Script, CSS2, db2, Tomcat 7.0, Eclipse, J2EE Design Patterns, Maven, SVN, Jenkins, jira, Unix shell Script, HP ALM, Ibatis, Web service

**Project Lead: Mahindra Satyam Bangalore India (Dec 2010-April 2012)**

**Sr Software Engineer: Ness Technologies Pvt Bangalore India (Feb 2008-Nov 2010)**

**Software Engineer: Corpus Software Pvt Bangalore India (2006-Jan 2007)**

**EDUCATION**

B. Tech - Computer Science & Engineering    Veer Bahadur Singh Purvanchal University, India (2001- 2005)

**CERTIFICATIONS**

AWS Certified Solutions Architect- Associate

AWS Certified Developer – Associate

Microsoft Certified Azure Solution Architect -Exper