# Bidwat Raj Pokhrel

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## Profile Summary

Software Engineer with 4+ years of experience building scalable microservices for 5 million+ users using Java, Spring Boot, and AWS. Established leadership through mentoring developers and facilitating cross-functional collaboration in agile environments.

## Education

**Texas A&M University, College Station** – MS in Computer Science — May 2026
**University of Bedfordshire, UK** – BS in Computer Science | GPA: 3.94/4 | First Class Honors — July 2021

## Experience

**XR Software Engineer (Graduate Research Assistant),** Texas A&M University (Java, Python, C#) — January 2025 – Present

- Built a high-throughput telemetry service using Spring Boot and PostgreSQL to batch process body-tracking data.
- Trained and integrated Machine Learning agents using Reinforcement Learning to synthesize realistic head motions for sign language avatars in Python using deep learning algorithms such as PPO and GAIL.
- Implemented multiplayer XR applications for Meta Quest 3 using C# with support for both remote and co-located users.
- Ran user studies with 10–24 participants; managed data collection and experimental operations; authored 5 technical papers currently under review at top-tier conferences (ACM ISMAR, ACM UIST, ACM CHI).

**Software Engineer,** Leapfrog Technology Inc. (Java [Spring Boot], JavaScript [React, Vue], AWS) — January 2022 – July 2024

- Led delivery of 4 Spring Boot microservices on Kubernetes for an E-Learning platform with 5 million+ users: Authentication (OAuth2 + Duo 2FA), File (S3 + CloudFront), Search & Analytics (OpenSearch), and Notifications (SES).
- Designed and delivered an Apache Kafka backbone that processes 2–5 million events per day, spanning core domain events and centralized logging with less than 200 ms communication latency and seamless scaling using Amazon EKS.
- Authored a reusable UI component library in Vue with Storybook and AI-driven implementation assistant (OpenAI API), reducing new feature development cycles by 30% across 13 internal apps.
- Upgraded authentication for 11 apps from Microsoft Active Direcoty to Okta SSO, cutting password reset tickets by 80%.
- Migrated 13 GB data from Oracle to PostgreSQL using PL/SQL scripts with zero downtime.
- Managed teams of up to 6 developers; established coding standards and best practices, reviewed code, and provided mentoring on daily execution.

**Associate Software Engineer,** Leapfrog Technology Inc. (Java [Spring Boot], JavaScript [React], AWS) — April 2021 – December 2021

- Optimized plate-transfer algorithm for 384-well robotic systems using optimized hash-indexing, reducing computational complexity from $O((mn)^2)$ to $O(mn)$ and saving 40 minutes of runtime per batch.
- Improved stability and maintainability of a drug discovery application suite by refactoring 16 legacy Java and JavaScript codebases, expanding unit test coverage using JUnit and Jest, and reducing SonarQube code smells by 35%.
- Designed and implemented RESTful APIs for molecular-weight calculation and compound-registration, enabling chemists to register over 1,000 compounds/month with fewer than 1% data-validation errors.
- Collaborated with cross-functional teams to deploy applications to Dev, QA, and UAT environments on AWS, ensuring strict version control via Git and CI/CD best practices.

**Software Engineering Intern** Leapfrog Technology Inc. (Java [Micronaut], JavaScript [React]) — December 2020 – February 2021

- Automated QA by designing a Chrome extension that captures screenshots and console logs, auto-creating Jira tickets, quadrupling bug-report volume (from an average of 30 to 120 per month) and reducing bug reproduction time by 70%.

## Projects

**BART: Bone Attached Augmented Reality Typing** | Unity/C#, TensorFlow, Keras — Read Full Paper

- Novel AR typing interface designed using skeletal hand-tracking, enabling discreet, hardware-free text entry with passive haptic; achieved 88.7% average typing accuracy after minimal training.

**Bounce (Classic Game Recreation)** | JavaScript, Custom Game Engine — Play Bounce

- A browser-based remake of the classic Bounce game using Vanilla JavaScript; implemented game engine from scratch with collision detection and accurate physics simulation utilizing HTML Canvas.

## Skills

**Languages:** Java, JavaScript, TypeScript, Python, C#, SQL, PLSQL **Frameworks:** Spring Boot, Node.js, NestJS, React, Vue

**Cloud/DevOps:** AWS (EC2, S3, SQS, Lambda, CloudWatch), Docker, Kubernetes (EKS), Terraform, Gradle Jenkins, CI/CD, Git

**Distributed/Data:** Kafka, PostgreSQL, MySQL, Oracle, Redis, Elasticsearch, OpenSearch **Testing:** JUnit, Jest, SonarQube

**Other:** System Design, Microservices, Observability, Monitoring, Performance, Scalability, Agile, Scrum