# Sampada Kulkarni

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## Education

**Northeastern University** *Expected Dec 2025*
*MS in Computer Science,* **GPA : 3.83/4.00**
**Vishwakarma Institute of Information Technology** *May 2021*
*B.Tech in Computer Science Engineering*

## Coursework

Programming Design Paradigms | Algorithms | Mobile Application Development | Privacy, Security & Usability | Foundations of AI | Computer Systems

## Experience

**Software Engineer** *Jan 2023 – Nov 2023*
*IBM Instana* *Bangalore, IN*

- Developed comprehensive **Java instrumentation API** code connecting **3 BPM platforms** (Camunda, IBM BAW, Red Hat) with IBM Instana, enabling real-time visibility between IT infrastructure failures and business processes for customers.
- Resolved **critical integration issues** between cross-functional team components through collaborative debugging and technical leadership, helping successfully launch IBM Instana's **first Business Monitoring product**.
- Standardized development processes through implementation of **streamlined testing protocols** and modular design patterns, resulting in significantly accelerated development cycles and improved product quality metrics.

**Software Developer** *Jan 2021 – Dec 2022*
*IBM* *Bangalore, IN*

- Engineered sophisticated **automated metric inference** system supporting both Sysdig and Instana data formats, accelerating evaluation efficiency by **10x** while ensuring seamless cross-platform compatibility for production environments.
- Reduced complex algorithm evaluation time from **2 hours to 10 minutes** by designing and implementing an intelligent Event-grouping service with custom ground truth generation for three distinct detection algorithms.
- **Led development** of a robust systematic fault simulation for QoTD and Sockshop microservice applications, enabling continuous integration testing within algorithm inference pipelines for enhanced reliability.
- Created comprehensive **end-to-end anomaly detection** evaluation suite that systematically identified **5 missed patterns** and **20-25 false positives**, featuring interactive time-series visualizations distinguishing predicted from expected anomalies.

## Projects

**The ROBIN** | *Python, TF-IDF Vectorization, SMOTE, Ensemble Learning, Flask, Beautiful Soup* GitHub Link

- Developed a **novel ensemble learning approach** for fake job posting detection that combines multiple optimized ML models, achieving **92% accuracy** through algorithm-specific preprocessing techniques.
- Identified key **linguistic patterns** in fraudulent job listings through advanced **text analysis** and feature engineering, creating an **explainable detection system** that provides transparent reasoning.

**TravelPal** | *Java, Android Studio, Firebase, Google Gemini API, Google Maps SDK* GitHub Link

- Engineered feature-rich mobile application integrating **Gemini API** and **Android/Java** to generate personalized travel itineraries for budget-conscious students, incorporating natural language processing for preference interpretation and customized recommendations.
- Implemented comprehensive **Firebase** authentication and real-time database architecture with **offline access** capabilities, alongside interactive **Google Maps SDK** integration for intuitive route visualization and location-based suggestions.

## Skills

**Languages & Tools:** Java, Python, JavaScript, Jest, Enzyme, Firebase, Google Maps SDK, Git/GitHub, CI/CD
**Monitoring & Data:** IBM Instana, Watson AIOps, Metric Anomaly Detection, Sysdig, Time Series Visualization
**Infrastructure:** Kubernetes, OpenShift, Docker, Automated Testing, Fault Injection Framework
**Domain Expertise:** BPM (Camunda, IBM BAW, Red Hat PAM), ML (Ensemble Learning, Text Analysis, Pattern Recognition)