Banudeep Reddy Gade

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SUMMARY

Software Engineer with 3+ years of experience in building **scalable full-stack** and **cloud-native applications**. Proficient in developing **microservices using Spring Boot**, designing interactive UIs with **React** and **TailwindCSS**, and deploying containerized solutions using **Docker**, **Kubernetes**, and **AWS**. Skilled in building **secure REST APIs**, implementing **CI/CD pipelines** with **GitHub Actions** and **Jenkins**, and managing backend workflows using **SQL**, **PostgreSQL**, and **MongoDB**. Adept at delivering **end-to-end web applications** with a focus on performance, maintainability, and automation.

EDUCATION

- **George Mason University** — Fairfax, VA
  Master of Science in Computer Science — August 2022 – May 2025
- **Visvesvaraya National Institute of Technology** — Nagpur, India
  Bachelor of Technology in Computer Science — July 2018 – April 2022

TECHNICAL SKILLS

- **Programming Languages:** Python, Java, JavaScript, TypeScript, C, C++, SQL, HTML, CSS
- **Web & Backend Development:** React, Angular, Vue.js, Redux, Spring Boot, FastAPI, Node.js, Express.js, Flask
- **Databases & Data Tools:** MySQL, PostgreSQL, MongoDB
- **Cloud & DevOps:** AWS, GCP, Docker, Kubernetes, Terraform, Git, GitHub Actions, CI/CD Pipelines
- **Testing & Tools:** Selenium, Postman, JIRA, Jenkins
- **Certifications: AWS Certified Cloud Practitioner (CCP)**, **Google Cloud Associate Cloud Engineer (ACE)**

WORK EXPERIENCE

- **George Mason University** — Fairfax, VA
  Graduate Research Assistant — August 2024 – May 2025
  - Collected 1M+ data points by developing multithreaded Python-Selenium scrapers, boosting statistical analysis depth and processing efficiency.
  - Improved experimental insight quality by designing a GPT-integrated website that conducted 500+ pre/post-treatment surveys.
  - Enhanced AI-driven analysis across 5+ research projects by integrating LLMs and streamlining research workflows.
- **Persistent Systems Limited** — Hyderabad, India
  Software Engineer — June 2022 – July 2023
  - Migrated data from 50+ client databases to BigQuery by designing custom SQL queries and DBT Cloud pipelines, improving scalability and centralization.
  - Reduced manual QA effort by 40% through Python-based automation scripts to verify data integrity post-migration.
  - Delivered actionable reports and tool usage insights that enhanced project workflows and cross-team efficiency.
  - Built a secure, role-based employee dashboard using **React**, **Spring Boot**, **OAuth2**, and **JWT**, improving access control efficiency by 40%.
  - Developed scalable **REST APIs** with **Spring Boot** and **PostgreSQL** to manage employee records, tasks, and leave workflows, reducing manual HR effort by 60%.
  - Automated real-time task updates and reminders using **AWS Lambda** and **SQS**, cutting update latency by 70%.
  - Containerized microservices with **Docker**, deployed via **Kubernetes**, and provisioned infrastructure using **Terraform**, accelerating deployments by 50%.
  - Streamlined CI/CD with **Jenkins** and **GitHub Actions**, reducing downtime and improving release reliability.
  - Enhanced system observability with **AWS CloudWatch**, lowering incident response time by 40%.
- **Vsoft Technologies Pvt Ltd** — Hyderabad, India
  Software Engineer Intern — June 2020 - July 2020
  - Built an OpenCV-Python pipeline to extract and validate data from 1,000+ national ID cards with 95%+ accuracy.
  - Reduced manual data entry time by **70%** by automating key field detection and verification using image preprocessing and contour analysis.

PROJECTS

- **MediFact – AI-Powered Chrome Extension for Health Misinformation Detection** — ***JavaScript, ManifestV3, BioBERT, LLM, FastAPI, Neo4j, MongoDB***

- Built a **browser extension** that **detects, fact-checks**, and **explains medical claims in real time**, enabling 500+ live claim verifications during testing and reducing user exposure to misinformation.
- Achieved high **semantic matching accuracy** using **BioBERT** and **LangChain** pipelines, integrating **Neo4j graph database** for **embedding-based retrieval** and **Google Fact Check API** for source validation.
- Engineered a **FastAPI backend** and **MongoDB datastore** for real-time claim handling, deployed a **WCAG-compliant UI** designed in **Figma** with **JavaScript**, and packaged it for **Chrome Web Store** distribution.
- Improved **user experience** with **glossary pop-ups** and **claim simplification features**, increasing session engagement by **40%** in pilot evaluations.

- **ZenTrail – National Park Exploration and Trip Planning Platform** — ***React, TailwindCSS, Leaflet, Flask, MongoDB***
  - Increased **trip planning speed by 60%** by integrating **GPT-4** for **natural language itinerary generation** tailored to user preferences.
  - Enhanced **accessibility** for first-time park visitors by building an **AI-driven recommendation engine** for trails, campgrounds, and activities.
  - Developed **interactive maps** with **real-time trail overlays** using **Leaflet**, backed by a **Flask API** and **MongoDB** for storing park data.
  - Delivered a **responsive, cross-platform UI** using **React** and **TailwindCSS**, improving **usability across devices**.
- **ASL Translator – Real-Time Sign Language Recognition System** — ***CNN-LSTM, PyTorch, OpenCV, Scikit-learn***
  - Achieved **94%+ accuracy** in ASL alphabet recognition by developing a **CNN-LSTM model with self-attention** for temporal gesture modeling.
  - Improved **prediction stability** and **training convergence** using **hybrid optimizers** (**HOA + PFA**) and **spatial-temporal preprocessing techniques**.
  - Reduced **overfitting** through **frame extraction**, **padding**, and **affine augmentation**; deployed a **real-time feedback loop** via **OpenCV** for interactive user corrections.
- **University Campus Experience Survey Platform** — ***Angular, Spring Boot, MySQL, Docker, Kubernetes, AWS S3, Git, Agile***
  - Increased **student participation by 35%** and improved feedback quality by developing a **full-stack survey platform** using **Angular**, **Spring Boot**, and **MySQL**.
  - Improved **data retrieval speed by 30%** through **optimized SQL queries** and **secure authentication mechanisms**.
  - Reduced **deployment time by 30%** by containerizing the app with **Docker** and orchestrating deployments using **Kubernetes** on **AWS S3**.
  - Enhanced **code maintainability** and **delivery efficiency** by managing **CI/CD workflows** in an **Agile team** with **Git** version control.
- **FraudSense – Real-Time Financial Fraud Detection System** — *AWS, Databricks, PySpark, Kafka, Airflow, Tableau, ServiceNow*
  - Developed a distributed fraud detection system to process financial transactions in near real time, using a serverless backend on **AWS Lambda**, **EventBridge**, and **DynamoDB**, achieving $<$5-minute end-to-end processing latency.
  - Engineered backend services for ML model inference and workflow orchestration using **Databricks** and **PySpark**, integrating seamlessly with cloud-native infrastructure and secure **IAM**-based access control.
  - Enhanced detection precision by 20% through backend feature processing pipelines leveraging user, merchant, and device metadata, and implemented **Kafka**-driven ingestion with **Airflow** for task scheduling.
  - Built REST API integrations with **ServiceNow** for automated fraud case creation and alerts, streamlining backend-to-platform communication and improving operational responsiveness.
  - Designed interactive dashboards in **Tableau** using backend data pipelines connected to **Databricks SQL Warehouses** to support real-time monitoring and reporting.
  - Collaborated in an agile, GitHub-managed team of four, owning full-cycle development and deployment, including CI/CD automation and observability enhancements.