Vinay Sanga

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SUMMARY

Passionate and driven Erasmus Mundus Scholar with over three years of experience in backend development and system architecture, demonstrating a strong proficiency in web technologies. My goal is to fuse Machine Learning and modern web development for user-centric web applications.

TECHNICAL SKILLS

Major Competencies: Software Development, Machine Learning, Data Science

Programming Languages: Java, Python, JavaScript, TypeScript, HTML, CSS, PHP, C++, Golang

Databases: MySQL, PostgreSQL, MongoDB, SQLite

Tools: AWS, Docker, Jenkins, Linux, Git, VS Code, IntelliJ Idea, Apache Eclipse

Frameworks and Libraries: Spring Boot, Apache Kafka, Eureka Server, React, Next.js, Tailwind, Flask, Pandas, Keras, Lit, Node, Workbox, Ultralytics

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EDUCATION

2023 - 2025   **M.S. Computer Science,** *University of L'Aquila, Italy*

2023 - 2025   **M.S. Computer Science,** *Abo Akademi University, Finland*

2016 - 2020   **B. E. Computer Science and Engineering,** *Savitribai Phule Pune University, India*

PROFESSIONAL EXPERIENCE

2024 - 2024   **Software Development Trainee**
Ahola Digital Oy Ab
- Created a web app which scans and detects various artifacts on a cargo truck. This included creating websockets, computer vision models and deploying PWA.
- Created algorithm for removal of background from images taken in a photobooth, further designing pipelines to burn this result to a new background.
- **Tech stack:** Golang, Lit, TypeScript, Service workers, Python Websockets.

2020 - 2023   **Software Engineer**
EQ Technologic
- Implemented an NLP-based search module that improved the user experience in EQube-BI 8.3
- Designed and deployed a high-performance scheduler microservice, resulting in a 15% boost in efficiency and a 5% decrease in memory overhead.
- Streamlined data access operations for critical business entities, achieving reductions in data retrieval times by 2700 ms and 3300 ms.
- Spearheaded a coding standardization initiative, which led to a 56% reduction of the codebase size, optimizing maintainability without sacrificing system capabilities.
- Authored 90% of the unit tests for critical modules which improved the JaCoCo code coverage metric to an exceptional 98%, ensuring robustness and reliability.
- **Tech stack:** Python, Java, Spring Boot, JavaScript, React, Kafka, Eureka Server, Jenkins.

2020 - 2020   **Software Development Intern**
Amazon
- Collaborated in a dynamic team of 6, playing a pivotal role in integrating payment processing for three distinct utility bill categories, enhancing the platform's transactional capabilities.
- Engineered a sophisticated logging system, which was instrumental in slashing transaction error rates by 15%, markedly improving user transaction experiences.
- Maintained a stellar 99.9% uptime for six critical REST APIs, improving reliability in service delivery.
- **Tech stack:** Java, Spring Actuator, SLF4J, AWS

RELEVANT PROJECTS

2024   **Delivery Fee Calculator ([Link](#))**

Overview: Created a backend service to calculate delivery fees based on the shopping cart value, delivery distance, number of items, and order time. The service supports both Docker and local Python environments for deployment.

Implementation: The service is built using Flask and Pydantic. It includes comprehensive input data validation to ensure all requests meet the specified criteria, as well as includes unit tests and integration tests.

Technologies: Python, Flask, Pydantic, Docker

2023   **Human Activity Recognition Using Smartphones ([Link](#))**

Overview: Developed a machine learning model to cluster human activities such as walking and sitting, recognized through sensor data from smartphones.

Implementation: The data was standardized to improve clustering algorithm performance. I employed K-Means and DBSCAN for clustering, with the number of clusters optimized using methods like the elbow method and silhouette score. Used dimensionality reduction techniques such as PCA, t-SNE, and UMAP to enhance computational efficiency and visualization of clusters.

Technologies: Python, Seaborn, Pandas, Scikit-learn

2023   **Banking Campaign Output Prediction ([Link](#))**

Overview: Created a machine learning model to predict whether a client will subscribe to a bank's term deposit, based on a direct marketing campaign.

Implementation: Undertook various data preprocessing tasks, and addressed the class imbalance using the ADASYN technique. I chose Logistic Regression and Multi-Layer Perceptron Classifier, and tuned the hyperparameters for optimal performance. The models were evaluated and refined based on accuracy, precision, recall, and F1-Score.

Technologies: Python, Scikit-learn, Matplotlib

2023 - 2023   **Boardgenie ([Link](#))**

Overview: Designed a user-friendly to-do board application to streamline daily task management, featuring an intuitive interface and seamless user experience.

Implementation: Developed as a Single Page Application (SPA) within a standalone Java framework, leveraging modern web technologies for a responsive and dynamic application.

Technologies: Java, Spring Boot, React, Next.js, TailwindCSS

2019 - 2020   **Automated Essay Grading ([Link](#))**

Overview: Pioneered an LSTM-RNN based system to grade human-written essays, aiming to automate and streamline the essay evaluation process.

Leadership: Directed a dedicated team of 4 developers, guiding the project from conception to successful implementation.

Outcomes: Achieved a remarkable accuracy rate of 96.2%, demonstrating the model's efficacy in assessing and grading essays.

Technologies: Python, Flask, Keras

OPEN-SOURCE CONTRIBUTIONS

- Fixed a run-time error in https://github.com/cocoon2wong/SocialCircle/pull/1
- Improved bot modules in https://github.com/thepriyamkalra/The-TG-Bot/pull/38
- Helped my friend to fix https://github.com/JanDeDobbeleer/oh-my-posh/pull/4498 in **oh-my-posh.**

ACHIEVEMENTS

- 3rd prize, Turku Design Sprint Hackathon organized by Sitowise, City of Turku in November, 2023.
- Erasmus Mundus full scholarship for Masters in Finland and Italy, 2023 - 2025.
- Finalist, Smart India Hackathon, 2018.
- Post Matric Scholarship, Government of India, 2016 - 2020.

LANGUAGES

English: Full working proficiency
Finnish: Elementary proficiency
French: Intermediate proficiency

Hindi, Kannada, Marathi: Native proficiency

HOBBIES
Playing guitar, Singing, Cooking, Cycling, Railfanning