Satyam Mittal

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Education

California State University - Fresno, CA USA	Master of Science (M.S.)	Aug 2021 - Dec 2023
Major in Computer Science		
Sant Longowal Institute of Engineering & Technology, India	Bachelor of Engineering(B.E.)	Aug 2014 - May 2018
Major in Computer Science		

Work Experience - 4 years

Pre-Fab Innovations, Inc   CA, USA
Machine Learning Software Engineer   Jan 2024 - Present
- Working alongside product team to develop the users requirements using on going cloud based AI LLM technologies.
- Using Jupyter notebook for **EDA** research and developing **ML-Pipeline** framework scripts for **production** release
- Proficient in using **OOPs, SDLC, AGILE framework, code quality, collaborating** with **Product** and **business** team.
- **Conduct** weekly **sprint** meetings, **intra-team research** discussion to explore new technologies in AI/GenAI.
- Developing **TDD oriented Rest APIs, microservices** using AGILE-SDLC framework using **Java-Spring framework.**
- Fine-Tuning the **Multi-modality** Layout-**LLM model** with **parameter-efficient-fine-tuning** with advanced quantization, mixed precision and qLoRA using Pytorch framework.
- **Data mining** and manipulation used to embed data into **vectorDB** to develop **RAG** querying systems using Llama.

Paytm   Delhi, India
Software Engineer   Sept 2019 - Aug 2021
- **Resolved production alerts** for increase in payment gateways response time, system overload, system downtime.
- Designed JAVA based **Rest API's** for run-time distributed caching reload on production servers.
- Managed production releases on AWS-EC2 with CI/CD pipeline.
- Wrote **mockito based automation code** following **TDD approach** with detailed documentation.
- **Collaborated** with cross-functional teams(**QA , Product**) to develop business features, assist teams in **UAT**.
- Gained experience in backend development with focus on scalable and maintainable code.

Zillious Solution Pvt Ltd   Delhi, India
Technical Associate   June 2018 - Sept 2019
- Developed search result **Rest API** with **atomic sql** transactions and front end design for B2B Bus ticket booking tool.
- Collaborated with the expense management team to **develop** a **microservice for deep learning OCR** parsing model. which **impacted** in enhancing B2B expense **operational efficiency by 40%** and an **accuracy of 97%**.
- **Revamped** the complete frontend for **the search result page** to single page search result.

Projects

Thesis - M.S |Computer Science - CSU Fresno | ([Thesis-Link](#))
   Topic: Blindfolded Spider-Man Optimization: A Single-point Metaheuristic Suitable for Continuous and Discrete Space
- **Developed a new metaheuristic algorithm** using **memoization concept** in higher dimensions.
- Researched on unbounded knapsack discrete problems and applied metaheuristics to achieve the most optimum. result following several higher dimensional **implementations ranging from 2-Dimension to 20-Dimensions**.
- **Data analysis** on statistical significance tests like shapiro-wills, kruskal-wallis, converse tests with **0.05 p value.**
- All experiments run on **Linux containers** on **AWS-EC2 instances**.

Tugposts, WebApplication on AWS-EC2 | [tugposts.com](#)
- An initiative to create a central tech content **open source directory**, **hosted on AWS-EC2** using MySQL DB and designed on **Spring-MVC Framework** using **Java** with complete **SSL encryption** done on EC2

Non-Convex Optimization Opensource Python Package | [pypi.org](#) | [GitHub](#)
- Python package **published on pypi.org** providing a collection of non-convex functions for testing and benchmarking optimization algorithms, written in Python and **install using pip** command

DATS-Data Analysis Through Synthesis | [GitHub](#)
- Personal data analytics tool developed using **Python Flask Rest API's** using **Langchain, OpenAI embeddings** and **OpenAI Gpt-4** text summarization. Use **DuckDB for in-memory storage** and give **analysis on user social-media activity** by feeding data as CSV.

Technical Skills

Data Structure, Python, Java, AWS-services, Object Oriented Programming, GenAI, PyTorch, LightGBM, ETL-Pipeline, Huggingface Transformer, Deep Learning, LLMs Fine Tuning, Apache-Airflow, Regression-Classification, RDBMS, MySQL, NLP, Redis, SpringBoot, Agile Development, REST API's, SDLC, JavaScript, Tomcat, JIRA, Jenkins, CI/CD, JSON, TDD, Scrum.