Satyam Mittal

satyam.mittal.usa@gmail.com   (+1) 559-917-8918   [Linkedin](#)   [GitHub](#)   [Portfolio](#)

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

Pre-Fab Innovations, Inc   CA, USA
Machine Learning Engineer   Jan 2024 - Present
- Optimizing the existing doc based Layout **LLM model** with **parameter-efficient-fine-tuning** combined with quantization and qLoRA, designed for filtering construction codes from official documents.
- Integrating Apache Airflow to automate the scheduling of Spark jobs, which are designed to preprocess the documents and information from multiple sources across each US state.
- Integrating LlamaIndex for loading and indexing the structured and unstructured data from multiple sources into vectorDB and integrating with existing Spark jobs.
- Conduct weekly intra-team research discussion to explore new technologies in Large Language Models..
- Collaborating with team members in developing day-to-day business requirements and working on **developing data load Rest API's for** in-house **progress dashboard systems** using PHP, JavaScript.

Paytm   Delhi, India
Software Engineer   Sept 2019 - Aug 2021
- **Resolved production alerts** for increase in payment gateways response time, system overload, system downtime.
- Designed a **Rest API's** for run-time distributed caching reload on production servers, **managed production releases.**
- Wrote **mockito based automation code** following **TDD approach** with detailed documentation.
- Collaborated with cross-functional teams(QA , Product) to develop application business features, assist teams in UAT.

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 Boot 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, XGBoost, LightCGM, Ingest-Train-Test ML Pipeline, Huggingface-Transformer, Deep Learning, LLMs Fine Tuning(LoRA, Quantization), Jupyter Notebook, SQL, Apache(Spark, Airflow), Regression Models, Classification Models, RDBMS, NLP, Redis, SpringBoot, Agile Development, Rest API's, SDLC, JavaScript, Tomcat, JIRA, Jenkins, CI/CD, Spring-MVC.