

## Work Experience - 4+ years

### Ascentt - Toyota Motors

Texas, USA

#### Senior AI Engineer

July 2024 - Present

As an AI engineer, developing GenAI based software frameworks for Toyota Motors used in the manufacturing units across the globe.

### Pre-Fab Innovations, Inc

California, USA

#### Machine Learning Software Engineer

Jan 2024 - July-2024

- Led the fine-tuning of multi-modality Layout-LLM models using PeFT methods in PyTorch following mixed precision.
- Developed ETL pipelines for embedding data into VectorDB, ensuring data integrity and accessibility for ML tasks.
- Utilized Python, PyTorch, Scikit-learn, MLFlow, and Airflow to build and deploy ML pipelines on AWS Sagemaker.
- Designed in-house QnA application using RAG architecture and vector DB deployed on AWS-Bedrock
- Conducted exploratory data analysis (EDA) to identify key insights and inform model development.
- Conducted weekly sprint meetings and intra-team research discussions to explore and adopt GenAI technologies.

### Paytm

Delhi, India

#### Software Engineer

Sept 2019 - Aug 2021

- Designed and implemented Java-based REST APIs for runtime distributed caching reloads on production servers.
- Resolved critical production issues related to payment gateway response times, system overloads, and downtimes.
- Managed production releases on AWS EC2 using CI/CD pipelines.
- Collaborated with cross-functional teams (QA, Product) and assisted in A/B and user acceptance testing (UAT).
- Gained hands-on experience with cloud technologies and container systems such as Docker and Kubernetes.

### Zillious Solution Pvt Ltd

Delhi, India

#### Technical Associate

June 2018 - Sept 2019

- Developed Java-Spring-MVC based REST APIs with atomic SQL transactions for B2B tools.
- Collaborated on a microservice for a deep learning OCR parsing model, improving operational efficiency and accuracy.
- Worked with 0.5 million image data-sets to develop, implement data-driven solutions for expense management tool.

### Zillious Solution Pvt Ltd

Delhi, India

#### Software Engineer Internship

June 2017 - Aug 2017

- Developed Java-Spring-MVC based Biometric attendance analysis REST APIs for ERP tool used in Zillious Solutions.
- Developed UI/UX for the ERP tool and a detailed leave tracking analysis dashboard for the tool.

## 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

## Projects | [Github](#)

### 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.

### 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

## Technical Skills

**Programming Languages & Frameworks:** Python, Java, JavaScript, Spring-MVC, Flask, JavaScript, Data Structures

**Software Machine Learning Engineering:** PyTorch, TensorFlow, Scikit-learn, Scipy, OpenCV, HuggingFace-Transformer, LLMs Fine Tuning, ETL ML Pipeline AWS-Bedrock, AWS Sagemaker.

**Development Practices & Tools:** RDBMS, MySQL, VectorDB, Object-Oriented Programming, SDLC, Agile Development, Scrum, TDD, CI/CD, JIRA, Jenkins, Docker, Kubernetes, MLFlow, Apache Airflow, Kafka, , Spark, AWS Cloud.