

# Sayali Kandarkar

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## EDUCATION

### CARNEGIE MELLON UNIVERSITY

Pittsburgh, PA

Master of Science in Artificial Intelligence and Innovation, GPA: 3.7/4.0

Aug 2022 - May 2024

- *Relevant Courses: Computer Systems, Coding Bootcamp, ML in Production, AI in Future Markets, Deep Learning, Machine Learning, Large Language Models, Advanced Natural Language Processing, Multimodal ML*
- *Graduate Teaching Assistant: AI for Medicine, Multilingual Natural Language Processing*

### K.J. SOMAIYA COLLEGE OF ENGINEERING, MUMBAI UNIVERSITY

Mumbai, India

Bachelor of Engineering in Information Technology, GPA: 8.2/10.0

Aug 2013 - Jul 2017

- *Relevant Courses: Big Data Analysis, Distributed Systems, Algorithms and Data Structures, Computer Architecture*

## WORK EXPERIENCE

### SIGNIFY R&D

Burlington, MA

*Machine Learning Research Intern*

Jun 2023 – Aug 2023

- Implemented a customer review project using search embedding models like Word2Vec, BERT and fine-tuned the embeddings using CNN, LSTM architecture for supervised learning to categorize reviews and identify top reasons for customer dissatisfaction, reducing manual analysis time by 90%
- Engineered an advanced Image Signature and Logo Detection system with a 93% accuracy using Computer Vision models such as ResNet and VGG, to attain reduction in brand counterfeits and enhancing brand integrity.

### STANFORD UNIVERSITY

Pittsburgh, PA

*Research Assistant*

Jan 2023 – Aug 2023

- Researched mental health disorder diagnosis using r-fMRI data under the guidance of Dr. Kaustubh Supekar.
- Employed cutting-edge deep neural network methods including CNNs, Encoder-Decoder architecture, and Transformers, achieving a notable 87% accuracy through CNNs – ([Research Paper](#))

### J.P. MORGAN CHASE & CO.

Mumbai, India

*Senior Software Engineer - III*

Aug 2017 - Jun 2022

- Developed a performance platform using microservices architecture with Kubernetes clusters and AWS services. Utilized Spring Boot microservices for complex calculations; enabled scalability and optimized performance, with in-memory caching and optimized queries; decommissioned the vendor product by saving the firm \$1.8 billion annually.
- Modernized architecture by Introduction of CICD pipeline (using JULES), Cassandra Reactive Programming and adoption of a centralized RESTful microservices based architecture, thus increasing uptime by 30%
- Spearheaded Agile Transformation for 100+ members global team. Prioritized Project delivery by leading as Scrum Master and coordinating with engineering lead project manager; decreasing project delivery time by 23%
- Led cloud adoption project; deployed it to AWS; implemented a Spring-Boot API service as a gateway between an internal cloud system and AWS Virtual private cloud for seamless data transfer, thus, increasing scalability by 65%
- Created an automated testing suite for a web application using Selenium and Python, and integrated it into a CI/CD pipeline with Kubernetes, thus, reducing manual testing efforts by 80%, saving approximately 20 hours per week
- Awarded AWM technology award three years in a row from 2017-2019 for commitment to innovation and excellence
- Promoted twice within four years, progressing from Software Engineer to Senior Software Engineer, and finally to AVP

## PROJECTS

### COVID-19 Twitter Assistance Project – ([Github](#))

- Engineered a chatbot to efficiently gather tweets containing critical COVID-19 resources such as oxygen, plasma, etc.
- Seamlessly integrated the bot with an AWS Lambda service to perform data preprocessing utilizing NLTK and spaCy
- Interviewed by Forbes India for assisting over 10,000 Indian citizens by providing timely and vital assistance

### Full-Stack Movie Recommendation System – ([Project Video](#))

- Built a movie recommendation system via Collaborative Filtering and SVD within Flask and Gunicorn for optimal speed
- Containerized through Docker for seamless scalability, performed real-time monitoring using Prometheus and Grafana

### CLAudioLM: Text-Guided Music Generation using Waveform Domain - ([Research Paper](#), [Project Video](#))

- Created a cutting-edge generative multimodal AI model for music, drawing inspiration from Google's MusicLM
- Enhanced the joint embedding component by transitioning from MuLan to CLAP, and optimized performance with EnCodec replacing SoundStream, using distributed training and GPU performance optimization
- Pioneered the development of a novel dataset (CapsGPT), leveraging ChatGPT's musical expertise to fine-tune CLAP

## SKILLS

**Programming Languages:** Python, Java, C++, JavaScript, TypeScript, AngularJs, ReactJS, Bash, SQL, LaTeX

**Machine Learning:** PyTorch, TensorFlow, Scikit-learn, Pandas, Numpy, Spark, PySpark, Keras, SpaCy, Huggingface, MLOps

**Development:** Flask, AWS, Git, Kafka, Pentaho, Tableau, Jenkins, Drools, Grafana, CI/CD, Docker, Selenium