

SUSHANT GAUTAM

Starkville, MS

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EDUCATION

Master in Computer Science, *Mississippi State University*

Aug 2023 - May 2025

Specialization: Artificial Intelligence, Machine Learning, Data Science.

Relevant Coursework: Algorithms, Cloud Computing, AI Robotics, Autonomous Vehicles, Data Science, Data Analysis, Deep Learning, and Machine Learning. GPA: 4.0.

EXPERIENCE

SDE Intern

May - July 2025

Amazon Inc

Seattle, WA

Will be joining the AI/ML Team.

Graduate Research Assistant

Aug 2023 - May 2025

Mississippi State University

Starkville, MS

Conduct research in the Research Lab for Robotic and Perception Technology (RAPTOR) of [Dr. Jingdao Chen's](#) in the field of computer vision focused on Generative AI.

Enhanced **image restoration** accuracy by 20% through GAN and Diffusion Models in collaboration with **Stanford, Princeton, and BlueHalo**.

Streamlined the machine learning model deployment process through **CI/CD pipelines** using **GitLab CI/CD, Docker, and Airflow** for automatic spin of containers over AWS EC2 instance and deployment of ML models through kubernetes.

Optimized **model performance metrics** using **Pytorch-Lightning, Optuna, and Scikit-learn**.

Technologies used: Pytorch, Tensorflow, Mlflow, MLOps, Scikit-learn, Kubernetes, AWS Sagemaker, Optuna, Docker.

Machine Learning Engineer

Feb 2023 - Aug 2023

Proxmed Pty. Ltd.

Victoria, Australia

Implemented a Large Vessel Occlusion (LVO) detection system using **YOLOv7** which is more accurate in the segmentation and classification of infected areas in converted 2D CT-SCAN image, raised accuracy overall by 8% and revenue by 10%.

Deployed models via **AWS Lambda** with a serverless configuration, reducing inference time by 5.5%.

Spearheaded **CI/CD pipeline development** and containerization with **Docker** and **Kubernetes**.

Developed **Distributed-GPU Training** strategy and applied model **quantization** using tools like **TorchScript, ONNX** to optimize model inference, reducing computation time for real-time predictions.

Technologies used: PyTorch, YOLOv7, AWS Lambda, Docker, Kubernetes, Label Studio.

AI Research Scientist - Contract Work

Feb 2022 - April 2022

HeHealth Inc.

San Francisco, CA

Enhanced classification accuracy by 7.25% by developing synthetic datasets using Dataset-GAN and advanced Few-shot Learning techniques, resulting in improved model performance.

Technologies: GAN, Few-shot Learning, PyTorch, Tensorflow, Data Augmentation.

Machine Learning Engineer

Oct 2020 - Oct 2021

Wiseyak Inc.

Bellevue, WA

Managed a cross-functional AI team, driving an **8.25% improvement in the accuracy of disease recognition models** for AI-assisted **medical diagnosis**, which led to **4.12%** improvement in customer satisfaction rate.

Developed and optimized **medical image diagnosis pipeline** that reduced false positives by **60%**, leveraging **custom machine learning pipelines** from scratch tailored for in-house use.

Technologies used: TensorFlow, PyTorch, CI/CD, MLOps, Mlflow, Containerization(Docker), SQL, SQLAlchemy, React.

PROJECTS

- End-to-End MLOps Pipeline for Image Classification with AWS Sagemaker:

Implemented a complete MLOps pipeline for an end-to-end image classification task with AWS Sagemaker.[\(GitHub\)](#)
- Realtime Data Streaming Data Engineering Project:

Used **Airflow, Python, Apache Kafka, Apache Zookeeper, PySpark, Docker compose** and **Cassandra** for real-time data streaming. [\(GitHub\)](#)
- Self-Driving Car:

Developed a minimalist autonomous vehicle using **Deep Learning** and **PyTorch** for navigation. [\(Github\)](#)
- Handwriting Recognition using Deep Learning

Built an OCR tool that converts handwritten text to digital text for research purposes during my undergraduate thesis with a CER of 3.04%. [\(Github\)](#)
- Related project work for the Graduate Course :Build Autonomous Tractor at Mississippi State University

where I led the project to build autonomous tractor with integration of LIDAR, GPS, Actuator, Sensors and RGB-D Camera. [\(Github\)](#)

ACTIVITIES & LEADERSHIP

President, MSU AI Club *Mississippi State University*, Jan 2024 - Jan 2025

Organized hands-on workshops on **Neural Networks, MLOps, and Generative AI**, alongside coordinating coding competitions, lab tours, and AI seminars to foster collaboration and AI education within the university community.

Organized a coding competition where participants built an image classifier to classify campus buildings, promoting real-world AI applications and model development.

SKILLS

Programming Languages:	Python, R, Java, C++, Scala, Bash, SQL
ML/AI Tools:	PyTorch, TensorFlow, Scikit-Learn, Keras, Pytorch-Lightning, HuggingFace
MLOps Frameworks:	Kubeflow, MLflow, Airflow, ZenML, DVC
Cloud Technologies:	AWS (S3, Lambda, EC2, Sagemaker), Azure, GCP
Data Engineering:	Apache Spark, PySpark, Airflow, Kafka, Zookeeper, Cassandra
Deployment Tools:	Docker, Kubernetes, Git, Jenkins, GitLab CI, FastAPI, Flask, SQLAlchemy
Technologies:	SQL, Model Deployment, Model Quantization, Pruning, Feature Engineering, Hyperparameter Tuning, Distributed-GPU Training, Machine Learning, Deep Learning, Computer Vision, Data Analysis, Data Visualization, Data Science, AutoML, CI/CD Pipelines, NLP, LLM