

# Shubham Jagtap

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## EDUCATION

### University of Michigan - Dearborn

*Master of Science in Artificial Intelligence*

Sep 2024 - Apr 2026

MI, USA

- **GPA:** 3.9
- **Coursework:** Visualisation virtualisation, Robot vision, Deep Learning, Pattern recognition and neural networks

### Savitribai Phule Pune University

*Bachelor of Engineering in Information Technology*

Aug 2019 - May 2023

INIDA

- **GPA:** 3.2
- **Coursework:** Artificial Intelligence, Machine Learning

## SKILLS

- **Tools & Languages:** Python, OpenCV, Git, Streamlit, React, SQL
- **Generative AI:** GANs, Diffusion Models, DreamBooth, Stable Diffusion, Transformers
- **Deployment & Optimization:** AWS Lambda, MLOps, CI/CD, Docker, Flask, FastAPI
- **Deep Learning Frameworks:** PyTorch, Hugging Face Transformers, PyTorch Lightning
- **Learning:** MONAI, 3D CNNs, Cryo-ET segmentation (DeepFinder paper)

## PUBLICATION

- Sheetal Takale, Shantanu Payal, Shubham Jagtap, Pranav Jagtap, Aftab Khan. Legal Data Assistive Tool Using Deep-Learning (IEEE). Developed a legal document summarization tool using DistilBART, Legal Pegasus, and Legal LED. DOI: 10.1109/IC-SCC58608.2023.10176784

## PROJECTS

### Speech-to-Image Generation System

*Whisper, Stable Diffusion v2, DreamBooth, PyTorch*

- Integrated Whisper for speech-to-text and fine-tuned Stable Diffusion using DreamBooth for personalized image generation.
- Applied mixed precision and memory-efficient training, reducing GPU usage by 30%.
- Achieved 15% improvement in text-to-image generation fidelity and accuracy.

### Weather and Night-Time Image Segmentation for Autonomous Driving

*DeepLabV3+, Exception-UNet, PyTorch*

- Fine-tuned segmentation models for low-light and adverse weather scenarios.
- Enhanced underrepresented class detection with focal loss and class rebalancing.
- Boosted mIoU by 12% over baseline; used for improving object detection in AV systems.

### LLM-Powered Fake News Detection with Explainability

*DeBERTa-v3, SHAP, ONNX, AWS Lambda*

- Fine-tuned DeBERTa-v3 on Kaggle dataset; reached 0.92 AUC.
- Incorporated SHAP to deliver token-level interpretability in model predictions.
- Deployed the model serverlessly via AWS Lambda for lightweight, low-latency inference.

### Legal Data Assistive Tool

*DistilBART, Legal LED, Flask, ReactJS*

- Built a pipeline for summarizing lengthy legal texts using transformer models.
- Designed a real-time document upload and summary system with frontend-backend integration.
- Improved preprocessing speed by 40% using chunking, keyword ranking, and POS tagging.

## CERTIFICATIONS

- **Advanced Learning Algorithm:** Coursera, Apr '24
- **Deep Learning:** Internshala, Oct '23
- **Python Basic:** HackerRank, Aug '24
- **OpenCV for Python Developers:** LinkedIn Learning, Jan '25
- **BCG GenAI Job Simulation on Forage:** Jan 2025, Completed a job simulation involving AI -powered financial chatbot development for BCG's GenAI consulting team.