

Tushar Deshpande

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EDUCATION

Virginia Tech

Masters Computer Engineering

Blacksburg, VA

Aug. 2024

Pune University

Bachelor's in Computer Engineering

Pune, India

Aug. 2015 – May 2019

EXPERIENCE

Course Grader - Applied Software Design

Virginia Tech

Aug 2024 – Present

Blacksburg, VA

- Graded all students assignments, projects and quizzes.
- Provided guidance to students on their assignments, giving critical feedback. Documented several procedures that helped students to grasp the concept easily.

Senior Consultant - Software

Hitachi, Ltd

Jan 2023 – July 2024

Pune, MH

- Led global Workday implementation projects impacting 300K+ employees across 600+ companies, improving digital HRIT processes by 20%
- Managed a 3-member team and drove product development using Agile and Azure DevOps.

Consultant - Software

Hitachi, Ltd

July 2019 – Dec 2022

Pune, MH

- Delivered 8+ end-to-end Workday implementations across industries, reducing processing errors by 30% through robust integrations
- Built a Q&A chatbot using AWS QnA Maker, Redis, Node.js, .NET, and C#.

PROJECTS

Fetch Benchmarking with DreamerV3 and SAC | PyTorch, Gymnasium, MuJoCo, Tensorboard

May 2025

- Implemented and benchmarked DreamerV3 (model-based RL) and SAC (model-free) on robotic manipulation (FetchReach & PickPlace).
- Achieved a 80% success rate on the Fetch Reach goal. Analyzed performance on success rate and convergence metrics - Code - View Paper

Factual QnA System using MoE LLMs and Knowledge Graphs | LoRA, Qwen, Neo4j, SPARQL

May 2025

- Built a domain-aware Mixture-of-Experts QnA system over CoDEX KG with LoRA-finetuned expert models and hallucination-checking fact verifier
- Achieved 80% factual accuracy; integrated Neo4j triple lookup and fallback router for scalable QA. - Code

Cattle BCS and Caliper Score Prediction using Multi-Modal Deep Learning

May 2025

- Built an end-to-end pipeline for predicting pig BCS and Caliper scores using RGB-D data, integrating YOLOv12 detection, SAM2 segmentation, and 4-channel preprocessing.
- Trained ResNet-50 and other DL models on folder-split data, achieving 80% BCS accuracy; addressed class imbalance using focal loss and weighted sampling.

Image Coloration using Deep Learning models | Pytorch, Matplotlib, OpenCV

Dec 2024

- Developed and compared multiple architectures—CNN Encoder-Decoder, U-Net with ResNet-18 backbone, and Conditional GAN (cGAN)—for automatic image colorization.
- Achieved progressive improvements in performance metrics: Mean Absolute Error (MAE) reduced from 0.0848 (CNN) to 0.0807 (cGAN), and Learned Perceptual Image Patch Similarity (LPIPS) score improved from 0.148 to 0.132, indicating enhanced color fidelity and realism - View Paper

Dynamic Options Pricing using Deep Learning | Pytorch, Matplotlib, Numpy, Pandas

Dec 2024

- Created a framework for dynamic options pricing with black scholes and Monte Carlo as benchmarks
- Explored MLPs, RNNs and LSTMs for efficient prediction of options for a time frame achieving 90% accuracy.

HF Detection using Deep Learning | Python, Flask, React, ML

Dec 2018 – May 2019

- Designed a custom CNN for HR detection with 92% accuracy and implemented SVM and Linear Regression for subtype classification and severity prediction, improving diagnostics by 20%.
- Built a scalable SQL database for 1,000+ records, integrated with ML pipelines, and optimized for 1M+ records.

GRADUATE COURSEWORK

Maths: Stochastic Signals and Systems, Optimization ML

Languages: Deep Reinforcement Learning, Advance Machine Learning, Computer Vision, Deep Learning, Natural Language Processing

TECHNICAL SKILLS

Maths: Multivariate Calculus, Linear Algebra, Statistics

Languages: C++, Python, SQL (MySQL), JavaScript, HTML/CSS

Frameworks: Flask, Streamlit, FastAPI

Developer Tools: Git, Docker, AWS Cloud Platform

Libraries: Pytorch, Pandas, NumPy, Matplotlib, Keras

AWARDS

Quarterly Award - HITACHI - Awarded for multiple successful project executions

Night of the Town Award - HITACHI - Awarded for successfully executing the Global LMS project and leading it

Monthly - HITACHI - Awarded for one of the best automations

PUBLICATIONS

Medium Deep RL & DL Blogs - [Link](#)

HF Detection System - [Link](#)

Review of DL techniques in prediction of HF - [Link](#)