Tejdeep Chippa

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Education

New York University — New York
Masters in Computer Engineering *GPA: 4.0* — Expected May 2026

IIIT Delhi — Delhi, India
B.Tech Electronics and Communications *GPA: 8.29* — Jan 2020 - May 2024

Work Experience

Self Drive - Vertically Integrated Project, NYU — New York, USA
AI Researcher — Aug 2025 - Present

- Spearheading the development of a SLAM and navigation stack on Earth Rover as part of NYU's Self-Driving VIP team, enabling 90% localization accuracy across dynamic indoor environments using ROS Noetic.
- Engineered a computer vision module that integrates MixVPR, DinoV2, and SIFT/ORB, achieving 3× improvement in way-point detection robustness under varying lighting/viewpoint conditions; optimized A* algorithm to reduce navigation failures by 40% in Gazebo simulations.

Reliance Jio Platforms Limited — Hyderabad, India
Software Engineering Intern — May 2023 - Jul 2023

- Engineered a YOLOv8-based system for multi-label attribute extraction (e.g. sleeve length, neck shape) across 25K+ fashion catalog images.
- Benchmarked YOLOv8 against branched CNNs, achieving a 10% gain in accuracy with comparable inference rates on DeepFashion and Fashionpedia datasets.
- Integrated robust preprocessing pipelines and optimized training workflows into AJIO's existing infrastructure, enabling scalable real-time deployment.

TavLab, IIIT Delhi — New Delhi India
Undergraduate Researcher — Dec 2022 - May 2023

- Investigated cross-virus generalization by transferring transformer-based strain prediction models from COVID-19 to MERS/Ebola using genome sequence embeddings.
- Designed experimental pipelines with latent space analysis, sequence modeling, and cross-validation across 3+ virus datasets.

Skills

Programming Languages:	Python, C, C++, JavaScript, SQL, Java, R
Tools and Technologies:	Git, HTML, CSS, Bootstrap ReactJS, Canva, Notion, Excel, Word, Visual Studio, Pandas, Pytorch, Keras, Tensorflow, Matlab, Photoshop, Adobe Suite, Illustrator
Technical Electives:	Data Structures and Algorithms, Artificial Intelligence, Machine Learning, Robotics, Computer Architecture, Advanced Machine Learning, ML Systems & Operations
Expertise Area:	Computer Programming, Deep Learning, Data Engineering, Data Science, UI/UX Design, Computer Vision, Statistics, Predictive Models, Product Management, LLMS

Projects

Dr. Dialog: AI for Everyday Health Queries

- Created a modular healthcare chatbot system powered by the TinyLLaMa 1.1M model to simulate clinical Q&A across diverse medical intents.
- Integrated a full MLOps stack with FastAPI, Docker, and MLflow to support scalable RESTful serving, experiment tracking, and model reproducibility.
- Enabled real-time system monitoring with Prometheus & Grafana and stress-tested latency under 100+ concurrent users using Locust and CI/CD hooks.

Label-Efficient Steering Control with I-JEPA

- Implemented I-JEPA-based steering prediction in the CARLA simulator using 86K unlabeled frames and a ViT backbone with block-masked pre-training and cosine + variance loss objectives.
- Curated data sampling strategies (random, spike-only, balanced) to mitigate label imbalance; validated that balanced sampling improved performance on rare turning events.
- Achieved 0.0018 MSE using just 5–11% labeled data, outperforming supervised CNN baselines; all experiments conducted on A100/V100 GPUs with scheduled pre-training and reproducible check-pointing.

AGNews Text Classification using LoRA

- Applied Low-Rank Adaptation (LoRA) to RoBERTa-base for AGNews classification, training only 667K parameters while achieving 88.42% accuracy under a 1M budget.
- Tuned LoRA rank, alpha, and dropout on query/key attention matrices using HuggingFace PEFT for optimal performance on constrained hardware.
- Leveraged HuggingFace Trainer, AdamW, and stratified sampling to ensure stable convergence and reproducible training on NYU HPC infrastructure.