

# HARSHIT AGRAWAL

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## Professional Summary

Machine learning enthusiast with hands-on experience in AI/ML projects and software engineering, seeking challenging internship and co-op opportunities to apply and expand expertise in Machine Learning, data analytics, and cloud technologies.

## Education

### State University of New York at Buffalo

August 2024 – May 2026

*Masters of Science in Computer Science and Engineering (AI/ML)*

*Buffalo, NY*

- GPA: 3.88/4.0
- Relevant Coursework: Intro to ML, Deep Learning, Computational Linguistics, Data Intensive Computing

### National Institute of Technology Puducherry

July 2017 – May 2021

*Bachelor of Technology in Electronics & Communication Engineering*

*Karaikal, India*

- Cumulative GPA: 8.17/10
- Relevant Coursework: Data Structures, Object Oriented Programming, Embedded Systems

## Technical Skills

**Languages:** Python, C++, Java, GoLang

**Tools/Frameworks:** PyTorch, TensorFlow, NLTK, OpenCV, Pandas, Scikit-learn, Docker, Kubernetes

**Cloud Technologies:** GCP (Vertex AI, BigQuery, Cloud Run), AWS, Terraform

**Development:** REST APIs, Jenkins, Git and Github, React Native, Android Studio

## Work Experience

### Ford Motors Company

July 2021 – July 2024

*Software Engineer*

*Chennai, India*

- Developed an ITO chatbot using Google's Generative AI and Embedding-based search, saving \$30,000+ monthly.
- Onboarded 50+ projects to GCP, designed CI/CD pipelines using Openshift Tekton and automated IaC (Infrastructure as a Code) deployments, reducing deployment time by 75%.
- Migrated dealer-facing VISTA application, from PCF to GCP Cloud for the EU market.

### Cemtech

June 2020 – August 2020

*Product Development Intern*

*Remote*

- Built a Language Learning App using react-native, leveraging AWS and GCP APIs for multilingual capabilities.
- Designed backend infrastructure using AWS services like RDS, EC2, and S3.

## Academic Projects

### Text to ASL Gesture Sequence Generation using Diffusion Model (in progress) | PyTorch

Spring 2025

- Explored and compared generative models (VAE, GAN, Diffusion) for image synthesis using MNIST and CIFAR-10 datasets; evaluated outputs based on quality, diversity, and training stability.
- Currently developing a U-Net-based diffusion model to generate high-quality American Sign Language (ASL) gesture images from text input, aiming to build a real-time ASL generation pipeline for accessibility applications.

### Reinforcement Learning-Based Pokémon Game | Python, RL

Fall 2024

- Designed a custom environment where an agent (Pokémon) navigates a jungle grid, maximizing rewards by interacting with friendly Pokémon and avoiding penalties from obstacles like enemies and water lakes.
- Implemented reinforcement learning techniques, including Q-Learning and SARSA, to train the agent to discover optimal paths to its destination with the highest rewards.
- Evaluated and visualized performance through trained Q-Tables, demonstrating effective policy learning.

### Object Detection and Tracking System | Python, OpenCV, ML

Spring 2021

- Built a system for vehicle, traffic and pedestrian monitoring with application in autonomous vehicles using HAAR Cascade Classifiers and background subtraction methods.
- Utilized Python libraries (Cv2, NumPy, Pandas, Matplotlib) for robust visualization and functionality.

## Leadership Experience

### Arts & Crafts Club

July 2019 – May 2021

*Head and Founder*

*NIT Puducherry*

- Established and initiated the Arts and Crafts Club at our institute.
- Led a team of 90+ members; managed financial resources, logistics, events and promotional initiatives.