

# Ashwin Satish

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## EDUCATION

<b>Northeastern University</b> <i>Master's of Science, Data Science</i> (GPA: 3.83) Machine Learning, Algorithms, Data Mining, NLP, MLOps	<b>Boston, MA</b> Sept 2024 - Apr 2026
<b>Christ University</b> <i>Bachelor's of Science, Computer Science</i> (GPA: 3.53)	<b>Bangalore, India</b> June 2020 - May 2023

## EXPERIENCE

<b>Northeastern University - Machine Learning Researcher</b>	<b>Jan 2025 - Present   Boston, MA</b>
<ul style="list-style-type: none"><li>Boosted true positives from <b>2% to 77%</b> while <b>maintaining zero false positives</b> for early-stage Lyme cell detection via a 7-model CNN ensemble (TensorFlow).</li><li>Built a pipeline for reconstruction &amp; masking of <b>10,000+ cell images</b>, saving the biology team weeks of manual work.</li><li>Improved accuracy by <b>13%</b> via augmentation &amp; L2/dropout regularization, achieving production-ready performance.</li></ul>	
<b>Northeastern University - Teaching Assistant (<i>Foundations of Data Science</i>)</b>	<b>Aug 2025 - Present   Boston, MA</b>
<ul style="list-style-type: none"><li>Mentored <b>300+ students</b> in linear algebra &amp; statistics for ML &amp; Data Science via problem-solving sessions &amp; <b>NumPy</b> demos.</li><li>Conducted <b>4+ weekly</b> office hours clarifying topics like constraint optimization, low-rank approximation, &amp; regression.</li></ul>	
<b>CarerAI - Data Science Intern</b>	<b>Jul 2023 - May 2024   Gurgaon, India</b>
<ul style="list-style-type: none"><li>Prevented <b>2,000+ unnecessary procedures</b> for customers by uncovering <b>500+</b> surgery avoidance cases through KNN analysis of patient records against historical data.</li><li>Leveraged EHR for a <b>risk-score</b>, improving classification accuracy by <b>26.4%</b>, increasing confidence in surgery avoidance cases.</li><li>Improved KNN's accuracy by <b>20%</b> using DBSCAN clustering to remove record outliers, reducing false positives in surgery recommendations.</li></ul>	
<b>Christ Consulting - Lead Developer</b>	<b>Jul 2022 - Apr 2023   Bangalore, India</b>
<ul style="list-style-type: none"><li>Led development of Python project system on <b>AWS</b>, migrating from paper to <b>100,000+ records</b> in <b>MySQL</b>, scaling operations without adding headcount.</li><li>Improved project success rates by <b>20%</b> by building interactive dashboards that surfaced at-risk projects for early intervention.</li><li>Optimized task completion rates by <b>24%</b> by engineering weighted user index to rank users on task &amp; performance metrics.</li></ul>	

## SKILLS

**Programming | Data:** Python, SQL, R, Pandas, NumPy, PySpark, Scikit-learn, TensorFlow, PyTorch, Hugging Face, OpenCV

**Visualization | Cloud:** Git, Tableau, Matplotlib, Seaborn, Plotly, AWS, GCP, Azure, PostgreSQL, Snowflake, Docker

**AI | Modeling:** Transformers, BERT, LoRA, AutoML, T5, LangChain/LangGraph, Kubeflow, Ollama, PydanticAI, MLFlow

## PROJECTS

### AI-Powered Pokémon Battle Strategy Engine

- Built & dockerized hybrid **Multi-Agent System (MAS)** integrating **Llama 3.2** with a **deterministic backend** for strategic analysis, ensuring **100% accuracy** on **game mechanics**.
- Engineered a RAG pipeline via ChromaDB & Sentence-Transformers, **indexing 20,000+ strategy docs** to ground LLM inference in semantic context.
- Developed a Recommender System ingesting **1M+ aggregated usage stats** via custom ETL pipeline for optimal team synergies.

### PantryPilot (2nd Place | MLOps Expo - Coursework)

- Contributed to the fine tuning, evaluation & automated deployment (**GCP**) of **Llama 3.2 3B** for personalized inventory recipes, resulting in **50% reduction** in **dietary violations** via LoRA adaptation.
- Collaborated on DPO feedback using a Teacher model (**Llama 3 70B**) for preference labelling, VLM for receipt OCR & Veo 3.1 for instructional video.