AYUSH SHARMA

Boston, MA | (857) 421- 9253 | sharma.ayush1@northeastern.edu | LinkedIn | GitHub | Google Scholar

EDUCATION

Northeastern University, Boston, MA — Sept. 2024 – Present

Khoury College of Computer Sciences — Expected Graduation: 2026

Candidate for a Master of Science in Artificial Intelligence

Related courses: Foundation of Artificial Intelligence, Algorithms, Unsupervised Learning, Data Mining

B.M.S College of Engineering, Bangalore, India

Bachelor of Engineering in Artificial Intelligence and Machine Learning, — 2024

Related courses: Machine Learning, Deep Learning, Probability, Statistics, Linear Algebra, Big Data Analytics, NLP — GPA: 9.01

TECHNICAL KNOWLEDGE

Programming Languages: Python, C++, Java, SQL, C, R Programming, CUDA

Libraries: NumPy, Pandas, PyTorch, TensorFlow, Keras, Scikit-learn, SciPy, Matplotlib, Seaborn, PySpark

Frameworks and Tools: Transformers, LangChain, GCP, Tableau, Agile, Git, FastAPI

Databases and Operating Systems: MySQL, MongoDB

WORK EXPERIENCE

Honeywell Technology Solutions, Bangalore, India

Automation Intern — Mar 2024 – Jul 2024

- Achieved a projected **15-20%** increase in warehouse productivity and improvement in throughput by leveraging **AI optimization** through a biologically inspired genetic algorithm, which resulted in efficient **resource utilization**.
- Accomplished the mapping and validation of warehouse workforce productivity and KPIs by developing a solution within the 'Industrial Automation' business group. **Patent** filed and accepted.

BOSCH Limited, Bangalore, India

Data Science Intern — Aug 2023 – Oct 2023

- Developed an **optimized data-driven** algorithm for **Safety Stock** computation of aftermarket automotive products of Bosch.
- Achieved a **90%** reduction in safety stock computation time by automating the process, decreasing it from 48 hours to 1 hour, and significantly reducing manual effort and man hours by focusing on **demand history** and **inventory analysis**.

Samsung Research and Development, Bangalore, India

Vision Research Intern — Apr 2023 – Sept 2023

- Developed a pet emotion interpretation module that analyzes facial and pose cues by fine-tuning the **EfficientNetB0** architecture with an accuracy of **95.02%**. Upon detecting emotions, the module replicated emotions through a **digital twin** in the metaverse, seamlessly integrated within the **Unreal Engine** environment. Awarded Excellence award for exceptional performance.

Dassault Systèmes La Foundation, Bangalore, India

Research Intern — June 2022 – Dec 2022

- Engineered a solution for **aqua shrimp farming using intelligent swarm fish for ecosystem monitoring and disease predictions**. Achieved real-time disease detection by fine-tuning the **YOLO-v5** model and deploying it on a Raspberry Pi 4. This allowed prompt identification of unhealthy shrimps and reduced identification time by **80%** through real-time data uplink to farm owners.

PROJECTS

Physics-Informed Neural Network Framework for Solving Partial Differential Equations — Mar 2023 – Aug 2024

- Led a research project which focused on harnessing the power of Physics Informed Neural Networks to solve higher order physics constraint differential equations. The project poster and report can be found here.
- Achieved losses in the order range $[10^{-6} - 10^{-10}]$ indicating the high precision with which the network performed.

Project Ahed: Predicting Prospective Customer Engagement — Jun 2023 – Jan 2024

- Optimized warm lead generation as an initiative to transform B2B marketing using AI to identify potential customers already interested in a client business's services or products with a test accuracy of **84%**.
- Following lead identification, a tailored, LLM-generated pitch is crafted and delivered to the prospective buyer, highlighting the product's Unique Selling Points (USP) in a way that resonates with the potential buyer's specific requirements.

Slip Analysis of fluid using Regression Techniques — Oct 2018 – Apr 2019

- Developed and compared **Regression** techniques [Lasso, Ridge, Linear] for analyzing fluid flow in various media under no-slip, first-order, and second-order slip conditions.
- Minimized losses to the order of 10^{-4} using **Gradient Descent** and **Stochastic Gradient Descent optimization** algorithms.

ACADEMIC PUBLICATIONS

- Crime Scene Analysis for News Headline Generation, 2023 4th IEEE INCET, Belgaum, India, 2023.
- Warehouse Automation using Line Follower Robot, 2023 4th IEEE GCAT, Bengaluru, India, 2023.