Utsav Sharma

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Driving cutting-edge research for implementing state-of-the-art Artificial Intelligence, Machine Learning, and Data Science models for achieving optimal results

Education

New York University, *New York, USA* **May 2025**
Master's of Science, Computer Science
Relevant courses: Data Science, Big Data, Data Visualization, Artificial Intelligence, Database Management Systems

Amity University, *Noida, India* **May 2023**
Bachelor's of Technology Computer Science (AI/ML Honors)
CGPA 8.44

Experience

Graduate Research Intern, *New York University* **Oct 2023 - Present**
- Contributing to the OpenROAD Mission and researching on ways to integrate ***Generative AI: Large Language Models (LLMs)*** such as Mistral, Falcon 7-Billion, and Llama to semiconductor digital design and hardware debugging
- Fine-tuned pre-trained LLM with self-curated dataset on high performance clusters with focus on OpenROAD hardware domain
- Improved the results of LLM by ***80%*** through prompt engineering and retrieval augmented generation for context development

Software Developer Intern, *Hewlett Packard Enterprises* **Jan 2023 - Jul 2023**
- Designed a standardized communication platform for the Indus Army Project
- Leveraged Python to create automated scripts for efficiently collecting data from APIs
- Applied data pre-processing techniques to ensure that collected information was accurate, consistent, and ready for integration into the centralized system

Engineering Intern, *Deloitte Touche Tohmatsu Limited* **Jun 2022 - Jul 2022**
- Conducted comprehensive research on the application of AutomationAI in the field of chatbot communication
- Explored emerging trends, industry best practices, and innovative technologies to enhance chatbot functionalities
- Crafted strategic chatbot layout which involved designing efficient workflows and logical processes to optimize chatbot interactions, resulting in improved user experiences

Data Science Intern, *SheValues* **Sep 2021 - Nov 2021**
- Implemented web-scraping using Python to aid their AI recommendation system
- Cleaned and pre-processed scraped data for further use

Projects

Smart Home Energy Management Web Application
- Designed a website using Python Flask, MySQL (XAMPP Version-3.7), HTML, CSS, JavaScript and Bootstrap for checking energy usage of household
- Created features including: Authentication system, User Registrations, CRUD Operation, Registered Smart Devices Records, Triggers, View Records and Graph Visualization
- Github repo: Git.

Predictive Analysis of Histopathological Images With Nature-Inspired & ML Algorithms **Jul 2022 - Jun 2023**
- Authored a journal research study in the field of medical diagnosis, employing Python-based algorithms to significantly enhance the accuracy of IDC breast cancer detection
- Achieved remarkable results with an approximate accuracy rate of ***99%*** across a broad spectrum of Nature-inspired and Machine Learning (ML) algorithms
- These algorithms, including Whale Optimization, Cat Swarm Optimization, Lion Optimization, Golden Eagle Optimization, and Adaptive Particle Swarm Optimization, demonstrated the capability to consistently deliver precise diagnostic outcomes

Analysis of AI Customer Segmentation Clustering Techniques **Jul 2021 - Jan 2022**
- Conducted an exhaustive literature review on clustering models to gain a comprehensive understanding of the field's state-of-the-art techniques. Leveraged this knowledge to develop a rigorous comparative study employing Artificial Intelligence techniques
- Utilized Python and advanced AI frameworks, including TensorFlow 2.0 and Keras, to conduct an in-depth comparative study with K-means and Hierarchical clustering algorithms
- The findings of this research were published on the IEEE platform

Twitter Sentiment Analysis **May 2021 - Aug 2021**
- Designed and implemented a sophisticated quantitative performance evaluator tailored for analyzing sentiments through emoticons
- Utilized Python programming environment to create and execute this innovative NLP project with algorithms, including Naive Bayes, Linear SVM, and Logistic Regression with a notable accuracy rate of approximately ***80%***

Key Skills

Languages:	Python, C, C++, Java, SQL, MATLAB
Operating System:	Windows, Linux, High performance clusters
Frameworks/Tools/ Technologies:	PyTorch, Transformers, Pandas, Numpy, Matplotlib, TensorFlow, Scikit-Learn, Keras, Seaborn, NLTK, HuggingFace, Inference Pipelines, Datasets, Github, Hadoop, Flask
Software:	Agile, Data Structures, Analysis and Design of Complex Algorithms, Networking, Business Process Management, Software Lifecycle
Cloud:	Google Cloud, AWS, Kubernetes