Aarushi Nema

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Education

Nanyang Technological University, Singapore Aug 2021 – Jun 2025

Bachelor of Computing, Data Science and Artificial Intelligence

- CGPA: 4.22/5.00 (Honors with Distinction)
- **Coursework:** Data Structures and Algorithms, Object Oriented Design and Programming, Introduction to Databases, Artificial Intelligence, Data Analysis with Computer, Neural Networks and Deep Learning, Information Retrieval, Database System Principles, Statistics, Data Analytics and Mining, Data Visualization, Machine Learning, Intelligent Agents, Big Data

Experience

Data Platform Intern, Hyundai Motor Group Innovation Centre Singapore May 2024 – Aug 2024

- Engineered and optimized scalable data migration pipelines from Relational DBMS (PostgreSQL and Tibero) to Hadoop Data Lake using Python, PySpark, Apache Airflow, and Bash scripting
- Developed RESTful APIs using Flask and PySpark to enable dynamic data retrieval and filtering from Hadoop Data Lake across multiple data formats
- Designed and implemented a dynamic data synchronization pipeline integrating multiple database systems to PostgreSQL using PySpark, ensuring data consistency and reliability
- Created technical documentation for data pipelines

Software Development (Data Application) Intern, Infineon Technologies May 2023 – Dec 2023

- Collaborated closely with stakeholders and product engineers to identify data challenges and translate business requirements into robust data engineering solutions, resulting in enhanced Tableau dashboards and optimized data pipelines with new feature integrations
- Developed Python scripts to automate extraction, transformation, and loading (ETL) process for production yield records into a SQL database using Jenkins, meeting stakeholder specifications, and creating an automated email notification system based on the data
- Spearheaded development of a centralized Robotic Process Automation (RPA) solution from scratch utilizing UiPath and Python, resulting in an 90% reduction in human intervention across four critical software tools
- Designed and implemented a Confluence-based chatbot using React, Flask, and SQL, significantly reducing time spent searching for and navigating through various software tools
- Presented technical projects and dashboards to cross-functional teams, translating complex data workflows into business impact.

Publications & Conferences

- A. Nema, X. Zhou, A. J. Jillella, S. Zhao, and S. Liu. *"Context-Aware and Knowledge-Grounded Conversational Recommendation with Prompt Learning."* **Pacific Rim International Conference on Artificial Intelligence (PRICAI 2025)**. Accepted for presentation and publication (forthcoming).

Academic Projects

Final Year Project: UniCRSxGraphRAG (Grade:A) GitHub: Project-UniCRSxGraphRAG

LLMs | Knowledge Graphs | Recommender Systems | Python | PyTorch | GraphRAG | OpenAI

- Architected and implemented an end-to-end conversational recommender system integrating pretrained large language models (DialoGPT) with GraphRAG for recommendation optimization and explainability by leveraging LLMs

Machine Learning - Elo Merchant Category Recommendation Kaggle Competition (Placed in top 5) GitHub: Elo-competition

LightGBM | Feature Engineering | Ensemble Learning | PyTorch

- Engineered a top 3.2% winning solution for the Elo Merchant Category Recommendation task using advanced

feature selection (SHAP, RFE, RFM clustering), outlier-aware modeling, and LightGBM ensembles.

Big Data Management System for HDB Resale Analysis (Grade:A-)   GitHub: Big Data Project
Big Data | Columnar Database | Java
- Developed a column-oriented data management system in Java with advanced optimizations (multi-key indexing, compression, zone mapping, heap sorting) to analyze HDB resale transactions efficiently.

Skills

Data / AI: SQL, PySpark, ETL Pipeline Development, PostgreSQL, MongoDB, Hadoop Data Lake, Tibero, PyTorch, Scikit Learn, TensorFlow, Excel

Programming Languages: Python, Java, Bash scripting, HTML, CSS, JavaScript, ReactJS, Linux, React Native, NodeJS, MongoDB

Data Visualization/BI: Tableau, Pandas, NumPy, Matplotlib

Tools & Technologies: Git, Docker, JIRA, Agile methodologies, Postman, Figma, WordPress, UiPath, Apache Airflow, Jenkins

Transferrable Skills: Entrepreneurship, Communication, Teamwork, Problem solving, PowerPoint Presentations

Co-Curricular Activities

Vice-chairperson, Information Technology Committee, NTU Student Union   Aug 2022 – Aug 2024
- Collaborated with external stakeholder and lead a team of UI/UX designers to create Figma designs for new projects including lockers booking portal and course timetable planner for students
- Re-architected the NTU Facilities booking portal used by 1000+ students; improved user satisfaction and website performance by 30%
- Crafted wireframes with UI/UX design principles in Figma; modernized frontend with HTML, CSS, JavaScript, ReactJS and Tailwind CSS to include features like advanced filters and pagination
- Developed database schema and created API endpoints in Django

Global Women Mentorship Program, Micron   Apr 2024 – June 2024
- Mentored by two technologists (Ms.Thein Than Khaing and Ms. Suryani Turtan) in Micron on building a successful career path, semiconductor industry, and innovation in technology

INSPIRE Women in Tech Programme Mentee, Credit Suisse (Singapore)   Apr 2023 – Jul 2023
- Successfully completed an innovative full stack mobile app solution to increase awareness of unconscious bias under the mentorship of Credit Suisse's technology team within 10 weeks
- Designed and developed several features using Figma and React Native, creating a smooth user experience design enabling users to take interactive quizzes, read articles, watch videos and reels, write journals, etc
- Utilized Node.js and Express for robust server-side functionality and seamless integration including libraries for user authentication, password encryption, content search, etc and employed MongoDB Atlas as the database for hierarchical data management
- Presented project outcomes to senior leadership, effectively translating complex technical workflows into clear, actionable insights for both technical and non-technical audiences.

Hon Gen Secretary, NTU Women in Tech   Aug 2022 – Aug 2023
- Collaborated with companies to host workshops and networking sessions with the Women in Tech community at NTU