AAYUSH NAIR

+1 (934) 227-8523 ⬦ Stony Brook, New York

aayushnair204@gmail.com ⬦ Linkedin ⬦ GitHub ⬦ Leetcode ⬦ Website

EDUCATION

Vellore Institute of Technology, Vellore   May 2021 - May 2025
B.Tech in Computer Science and Engineering   CGPA: 8.65/10

Stony Brook University, New York   August 2025 – Present
M.S. in Computer Science

EXPERIENCE

Veniso Solutions — Full stack Develeloper Intern   Aug 2023 – Oct 2023

- Built a React.js music app with optimized audio playback, improving load speed and performance by 25%.

CrowdUpss — Software Developer intern   Jun 2024 – Sept 2024

- Developed a FastAPI backend tested for 10,000+ concurrent users, enabling scalable startup collaboration.
- Designed user interfaces that increased engagement by 15%.

PROJECTS / RESEARCH PAPERS

C++ Algorithmic Order Matching Engine (GitHub)

- Built a low-latency in-memory trading engine in C++ with price–time priority matching.
- Implemented an O(1) OrderIndex enabling constant-time lookups and cancellations.
- Designed modular components (OrderBook, PriceLevel, Order) ensuring scalability and extensibility.

BentoDBMS – Simplified SQL Database Engine in C++ (Github)

- Built a lightweight C++ SQL database engine supporting CREATE, INSERT, SELECT, UPDATE, JOIN, and B+ Tree indexing.
- Developed custom file storage and index structures for efficient table, record, and index management.
- Implemented modular components using OOP to mimic internal DBMS workflows and enable scalable design.

RoPE-Enhanced Informer for Lithium-Ion Battery Remaining Useful Life Prediction (DOI)

- Developed the RoPE-Enhanced Informer (REI) by integrating Rotary Positional Encoding (RoPE) with the Informer model.
- Outperformed peer models in MAE and RMSE for battery Remaining Useful Life prediction.

ACHIEVEMENTS

IDEOZEN Hackathon winner, YANTRA 2024: Built a GenAI and ML web app to support children with learning disabilities, providing assessments, therapy resources, and a dyslexia game using TensorFlow.(Github)

TECHNICAL SKILLS

Languages: C/C++, Python, Java, JavaScript, HTML/CSS

Databases: MySQL, MongoDB

Frameworks & Libraries: React.js, Node.js, TensorFlow

Tools: Git, GitHub, Figma

Concepts: Machine Learning, Deep Learning, Object-Oriented Programming (OOP), Operating Systems, Data Structures & Algorithms (DSA), Distributed Systems, Database Management Systems, Computer Networks