Showmick Das

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Education

Georgia Institute of Technology Atlanta, GA

Bachelor of Science in Computer Engineering *Expected Graduation, May 2027*

- **GPA:** 4.00/4.00
- **Relevant Coursework:** Machine Learning, Deep Learning, Data Structures & Algorithms, Discrete Mathematics, Objects & Design, Object-Oriented Programming, Computing in Python, Linear Algebra, Calculus I - III

Experience

The Apache Software Foundation May 2025 – Present

Open Source Developer *Wilmington, Delaware, United States (Remote)*

- Selected by Georgia Tech's Open Source Program Office to contribute to Apache's **Cybershuttle**, a distributed research platform for **interactive HPC access**. Collaborating on **CI/CD pipelines**, **containerization**, **testing**, **issue tracking**, and **pull request reviews** in an open-source workflow.

University of Georgia – Dept. of Epidemiology & Biostatistics May 2025 – Present

Machine Learning Intern *Athens, Georgia, United States*

- Designing ML pipelines using **neural networks**, **tree-based models**, and **logistic regression** to clean and analyze heart rate variability (HRV) from wearable **PPG sensor** data.
- Assessing data quality across variables like movement, skin tone, and sensor placement, while co-authoring research outputs for the **American Heart Association Epi Lifestyle 2026 Conference**.

Stanford University Apr 2025 – May 2025

Section Leader – CS106A *Stanford, California, United States (Remote)*

- Led weekly coding sessions on core Python concepts including **control flow**, **data structures**, and **object-oriented programming** using Stanford's Karel and Graphics libraries. Graded assignments, debugged student code, and reinforced foundational programming through walkthroughs and exercises.

Georgia Institute of Technology – Artificial Intelligence Lab Jan 2025 – May 2025

Research Assistant *Atlanta, Georgia, United States*

- Developed a RESTful **Flask API** with reverse proxy support to enable model loading, dataset uploads, fine-tuning, and inference for **Large Pre-Trained Time-Series Models (LPTMs)** on an **NVIDIA DGX** server.
- Fine-tuned **LPTMs**, built a dashboard to run forecasts and visualize results, and summarized research outcomes, methodologies, and benchmarks against other **Foundational Time-Series Models** like **Chronos**, **TimesFM**, **TimeMoE**, **MOMENT**, and **Moirai**.

Georgia Institute of Technology – Exascale CFD Lab Jan 2025 – Apr 2025

Research Assistant *Atlanta, Georgia, United States*

- Implemented **matrix operations** in **C++** and ported to **Kokkos** for **GPU-accelerated** CFD solvers.
- Researched ML-based acceleration for CFD using **operator learning**, **super-resolution**, and **PyTorch** prototypes for **real-time inference** and **coefficient prediction** in the **1D Burgers' equation**.

Projects

CarbonLens – GitHub Repository Nov 2024 – Dec 2024

- Built a dashboard to evaluate automotive sustainability using **Pandas** to process **320K+** emissions records and **Matplotlib** for visualizing CO_2 trends.
- Achieved **98.7%** accuracy using **Random Forest**, **Linear Regression**, and **Prophet time-series forecasting** to predict emissions, fuel efficiency, and powertrain shifts.
- Fine-tuned **OpenAI's CLIP** for car image classification, integrated **Cohere API**, and applied **Hugging Face Transformers** to extract insights from sustainability reports and Reddit sentiment.

Technical Skills

Languages: Python, Java, C++, Bash, MATLAB, TypeScript, JavaScript, HTML/CSS
Frameworks: PyTorch, Tensorflow, Scikit-learn, Kokkos, Flask, Springboot, Pandas, NumPy, SciPy, Matplotlib, Streamlit, Next.js, React.js, Tailwind CSS, Node.js
Developer Tools: Git, Postman, Ngrok, CUDA, Azure, Hugging Face, Firebase, MongoDB