

Shourjo Aditya Chaudhuri

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EDUCATION

- **University of Wisconsin-Madison** Madison, WI
Bachelor of Science in Computer Science and Data Science; GPA: 3.95 Expected Dec. 2025
- **Relevant Coursework:** OOP, Data Science, Statistics, Data Structures, Algorithms, Applied Database Design, Artificial Intelligence & Machine Learning, Big Data Systems, Optimization, Database Management Systems.

EXPERIENCE

- **University of Wisconsin-Madison** Madison, WI
Machine Learning Researcher (PyTorch, Scikit-learn, Python, Pandas, Matplotlib) Sept. 2024 - Present
 - **Fine-tuned** CLIP (400M parameters) on CIFAR-100 (60K images) using **PyTorch** on GPU clusters, conducting a comparative study on Sparse MoE, Soft MoE, and Linear models for OOD performance.
 - Created **5** data augmentation pipelines to simulate OOD data(assessed using **K-Nearest Neighbors**) and incorporated custom loss terms to mitigate expert imbalance.
 - Implemented a test-time ensemble strategy using a 1/K uniform expert distribution for Soft Moe models in **PyTorch** to evaluate performance without learned gating, enabling robust ablation analysis.
 - Designing a Kalman filter-based approach for **multi-modal** time series forecasting integrating textual and numerical time-series data.
- **World Salon** New York City, NY
Frontend Software Engineering Intern (React.js, CSS, HTML, Postman, JavaScript) Sept. 2024 - Dec. 2024
 - Enhanced the World Salon Platform's portal by using **CSS** and developing **7+** dynamic components in **ReactJS**, improving user engagement by **20%**.
 - Implementing efficient data fetching strategies using **Axios** and **Fetch** ensuring seamless integration with the AI event builder and backend teams.
 - Communicated project progress in weekly feedback sessions through **presentations and visualizations**, translating technical concepts for non-technical stakeholders.
- **Cogoport** Remote
Backend Software Engineering Intern (FastAPI, PostgreSQL, Conductor, Python, Postman) May 2024 - Aug. 2024
 - Reduced financial losses by **\$75,000** by engineering a shipment cancellation system with **5+** **PostgreSQL** models, using **Pydantic** for validation and **FastAPI** for high-performance routing
 - Orchestrated complex shipment workflows using Netflix's **Conductor**, defining scalable task pipelines, which reduced manual intervention in shipment processing by **30%**.
 - Designed an agent allocation engine and dynamic FTL weight adjustment with Celery, improving resource utilization by **20%** and enhancing API reliability through **Postman** and Swagger testing.

PUBLICATIONS & PROJECTS

- **TARDIS: Mitigating Temporal Misalignment via Representation Steering:** Changho Shin, Xinya Yan, Seunggwon Jo, Sungjun Cho, **Shourjo Aditya Chaudhuri**, Frederic Sala. arXiv preprint arXiv:2503.18693, 2025.
- **EstateEasy:** Built and deployed a **full-stack** Linear Regression model to predict real estate prices (**84% accuracy**) via **Flask**, optimizing with feature engineering, outlier removal, dimensionality reduction, and **GridSearchCV**.
- **PremFun:** Built a **Random Forest** model to predict English Premier League match winners (**60.5% accuracy**) by scraping and preprocessing match data with **Requests**, **Beautiful Soup**.

SKILLS

- **Languages:** Python, Julia, Java, JavaScript, TypeScript, HTML, CSS, R, SQL, C, C++
- **Technologies & Frameworks:** React, Flask, FastAPI, JuMP modeling, Docker, Git, Linux, Recoil, Node, Express, JSP, Tomcat, Tailwind CSS, Peewee ORM, Postman, Swagger, AWS, Serverless Backends(Cloudflare), BigQuery,
- **Machine Learning & Data Analytics:** PyTorch, Scikit-learn, Beautiful Soup, Pandas, NumPy, Matplotlib, Spark, Hadoop, Kafka, Cassandra, BigQuery, PostgreSQL, MySQL, MongoDB