Kuber Sarwal

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EDUCATION

Georgia Institute of Technology — Atlanta, GA
Bachelor of Science in Computer Science — *Expected Graduation: May 2027*

EXPERIENCE

Machine Learning Engineer, Joint Financial Data Committee — Atlanta, GA
Georgia Institute of Technology Student Government Association — *Oct. 2025 – Present*
- Built an **LSTM model** to manage **$50M+** across 600+ student orgs, improving allocation efficiency and transparency by creating a pipeline to pull and process data from **AWS EC2**.
- Developed a **fraud detection system** using the **Isolation Forest algorithm** with automated reporting pipelines, enabling real-time oversight and streamlined budget workflows.

Research Intern — Camden, NJ
Rutgers University — *Jan. 2024 – Jan. 2025*
- Analyzed algorithmic bias in redlining using HMDA data (25M+ samples, 2007–2023), engineered features, and built ML models (**Random Forest, SVM, Logistic Regression, Neural Nets**) in **PyTorch/scikit-learn** to evaluate fairness metrics such as statistical parity, disparate impact, and Theil index.
- Reduced dataset bias by up to **59%** using **reweighting** and **domain knowledge** with **AI Fairness 360**, conducted detailed model validation and interpretation, and published findings at **IEEE BigData 2024**.

Machine Learning Intern — Montgomery, NJ
Learnroll LLC — *Dec. 2024 – Mar. 2025*
- Labeled **10K+ frames** using **CVAT** and trained a **YOLOv8 model** to analyze CPR keypoints and metrics.
- Deployed model with metrics (depth, frequency) and backend on **AWS EC2** for scalable real-time feedback.
- Presented AI-driven CPR trainer at a heart charity event (50+ attendees).

Independent Researcher — Remote
Journal of Emerging Investigators — *Jun. 2023 – Jan. 2024*
- Trained a custom **AlexNet CNN** on 14K+ shark species images (150 epochs), achieving **98.7% accuracy**; used MATLAB for preprocessing and analysis.
- Authored a peer-reviewed paper in the *Journal of Emerging Investigators* and presented findings at an AI research symposium (50+ attendees).

PROJECTS

Pebble | *React, Flask, Python, Mediapipe, YOLO, Google Gemini API* — Oct. 2025
- Developed an AI-powered study companion that tracks gaze, posture, and phone usage using **Mediapipe** and **YOLO** to deliver real-time feedback with **94% accuracy**; integrated a **Vapi-powered voice agent** for interactive focus reminders.

Perfect Punch - BDBI@GT | *Python, Flask, React, KNN, Neural Networks, Random Forests* — Sep 2025 – Present
- Built an AI-powered boxing assistant that classifies punches and evaluates metrics (range, frequency, dodge time) using an **active learning (QBC)** pipeline with KNNs, Neural Networks, and Random Forests (**96% accuracy**); trained on the **PACE cluster**.
- Integrated an **LLM coaching agent** providing real-time feedback and progress visualization through a **Flask–React dashboard**.

ServeSmart | *ReactJS, Flask, SQL, OpenAI API, XGBoost* — Sep. 2025
- Developed an **XGBRegressor**-based model, deployed via **Flask**, to forecast restaurant demand with **86% accuracy** and optimize purchasing to reduce food waste.
- Integrated an **OpenAI chatbot** for ingredient planning, inventory tracking, and surplus routing to local food banks with dashboard visualization.

TECHNICAL SKILLS

Languages: Java, Python, JavaScript, HTML/CSS, SQL, C++, C#, R
Frameworks: React, React Native, Node, Flask, Angular, Django, FastAPI, AWS
Developer Tools: Git, Google Colab, PyCharm, IntelliJ, Jupyter Notebook, Azure, MongoDB
Libraries: Pandas, NumPy, Matplotlib, PyTorch, TensorFlow, Scikit-learn