Simran Sareen
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EDUCATION 🎓

Rutgers University - Engineering Honors Academy <div align="right">New Brunswick, NJ</div>

Graduate GPA: 4.0/4.0

Master of Science in Machine Learning (Computer Engineering) <div align="right">*January 2025 - December 2025*</div>
Bachelor of Science in Electrical and Computer Engineering <div align="right">*September 2021 - December 2024*</div>

Related Coursework: Large Language Models・Computational Imaging (Inverse Problems)・Data-Driven Control Systems・Machine Learning ・Distributed Deep Learning・Reinforcement Learning

SKILLS ⚗️

Programming Languages: Python, SQL, JAVA, JavaScript, HTML/CSS, MATLAB, Tcl/Tk

Tools: Snowflake, GCP, UI Path, TensorFlow, Retool, Cadence Innovus (Certified), Cadence Genus (Certified), Arduino, Scikit-learn, Pandas, NumPy, Matplotlib, Seaborn, MySQL, MongoDB, Github, LTSpice

WORK EXPERIENCE 💼

Data Engineer Intern <div align="right">*April 2024 - Present*</div>

Colgate-Palmolive, Piscataway, NJ

➢ Deployed a Snowflake data pipeline integrating dbtDocs, Python, and SQL to automate Walmart Instock data reporting, reducing processing time by 80% while maintaining 99.2% data accuracy through historical validation and quality checking.

➢ Leveraged Python (openpyxl) to streamline monthly reports, cutting execution time from 4 hours to 30 minutes.

➢ Developed a canine behavior classification model using wearable motion sensor data, achieving 80%+ weighted F1-score with CatBoost, Random Forest, and CNN on an imbalanced dataset.

➢ Supported the Walmart team in automating DOMO dashboards integration in Snowflake using SQL and UI Path and presented high-level insights to senior managers.

Digital Implementation Application Engineer Intern <div align="right">*May 2023 - August 2023*</div>

Cadence Design Systems, San Jose, CA

➢ Backported a Sous Vide Precision Cooker chip from GPDK45 (45 nm) to SKY130 (130 nm) process node.

➢ Utilized Cadence Genus and Cadence Innovus to perform Synthesis and PnR through GUI and Tcl scripting.

➢ Resolved DRC/STA violations during post-routing through buffer cells, area expansion, and halo placements.

➢ Collaborated with the Analog Design team for top-level chip integration of PLL and ADC blocks, and created blockage around power pins to prevent metal shorts using Cadence Virtuoso.

➢ Presented Sea-of-Gates and Digital-On-Top designs to senior management during design reviews.

PROJECTS 👤

NeuraFocus

➢ Developed a wearable neurofeedback device with a real-time alert system that detects distraction and delivers instant haptic feedback, guiding users back to focus.

➢ Built a real-time EEG-based ML model that detects cognitive states (focused, unfocused, drowsy) with 97% accuracy, using LSTM neural networks (including hyperparameter tuning) for time-series classification.

➢ Designed a real-time ML pipeline that processes EEG signals on Arduino, using STFT filtering and Flask API for seamless data exchange and live inference.

Glioma Classification

➢ Applied Chi-Squared test for feature selection in a Supervised ML task, targeting gene mutation features to differentiate between Lower-Grade glioma (LGG) and Glioblastoma (GBM) in cancer research done through TCGA.

➢ Achieved 87% accuracy using Logistic Regression and 86% with K-Nearest Neighbors models, which included nested cross-validation and hyperparameter tuning via GridSearch CV (training and evaluation through 10-fold CV).