JEREMY TAN

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Education

Duke University *August 2023 - May 2025 (Expected)*
M.S. in Data Science, GPA: 3.99 *Durham, NC*

- Relevant Coursework: NLP, Statistical Modeling, Machine Learning, Deep Learning, Data Engineering, Cloud Computing
- Awards: Dean's Research Award, 2024 Duke AI Hackathon 3rd Place, 2023 Traveler Analytics Competition 3rd Place

University of California, Santa Cruz *September 2017 - June 2021*
B.S. in Computer Science *Santa Cruz, CA*

- Relevant Coursework: Data Structures & Algorithms, Artificial Intelligence, Computer Architecture, Operating Systems

Technical Skills

Programming: Python (Pandas, NumPy, PyTorch, TensorFlow), JavaScript, R, SQL, Java, C/C++
Tools: Google Cloud Platform, AWS, Docker, Git, ServiceNow, Databricks
Data Science: A/B Testing, Regression Analysis, Causal Inference, Machine Learning

Professional Experience

Tata Consultancy Services *June 2021 - July 2023*
Software Engineer *Santa Clara, CA*

- Engineered Python ETL pipeline with API integration using Apache Airflow and DocumentDB that analyzed Autonomous Vehicle (AV) metrics and CARLA simulations, saving 10+ hours weekly and increasing safety test coverage by 30%
- Constructed Python framework that ran 100+ CARLA simulations, identifying 5 critical safety vulnerabilities
- Built a YOLO-based vision system to detect and classify wiring harness connector actions in autonomous vehicle assembly. Automated monitoring of connector placement, reducing QA bottlenecks by 20%+ and improving process reliability

University of California, Santa Cruz *March 2018 - June 2021*
Information Technology Services (ITS) Business Analyst Intern *Santa Cruz, CA*

- Integrated JavaScript client scripts and custom workflows with data validation UI policies in ServiceNow, streamlining request fulfillment for 3,000+ university faculty and staff and reducing processing time by 35%
- Developed RESTful API integrations between ServiceNow and legacy systems using JavaScript and JSON, enabling real-time data synchronization across 15+ university departments

Research Experience

Duke University Social Science Research Institute *January 2024 - Present*
Research Assistant *Durham, NC*

- Created temperature-pair dataset from 500,000+ patient records across 3 EHR databases using Python, R, and BigQuery
- Implemented regression models in R to quantify statistically significant racial and ethnic disparities in temperature measurements, identifying previously undetected clinical biases
- Led data pipeline development for research published in PhysioNet, SCCM, and Nature submission under review

Computer Vision Lab, University of California, Santa Cruz *October 2019 - October 2023*
Research Assistant *Santa Cruz, CA*

- Architected 5 API features for SIM web application to generate tactile maps and 3D floor plans for visually impaired users
- Enhanced map rendering performance by 40% through transition from JavaScript canvas to custom SVG implementation
- Overhauled 4 Express routes for room segmentation tool with optimized MongoDB CRUD operations

Tech4Good Lab, University of California, Santa Cruz *September 2019 - October 2023*
Research Assistant *Santa Cruz, CA*

- Deployed 4 Python-based research projects on Google Cloud Platform with Slack API integration
- Streamlined collaboration by integrating internal meeting tool into Slack, improving scheduling efficiency by 30%
- Devised DAG SVM model linking Stack Overflow questions to web development learning site with 90% accuracy

Projects

Multi-Agent LLM Framework for FOMC Interest Rate Prediction *August 2024 - Present*

- Designed a multi-agent simulation framework using large language models to replicate FOMC decision-making processes, achieving granular insights into federal interest rate predictions for Bank of New York
- Established comprehensive backtesting methodology with statistical metrics, quantifying agent-level prediction accuracy, consensus stability, and rate change forecasting precision across multiple simulation scenarios