Boyang Gong

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EDUCATION

Georgia Institute of Technology (Georgia Tech), Atlanta, GA *August 2024 – May 2027 (Expected)*
Bachelor of Science in Industrial and Systems Engineering (Concentration: Analytics and Data Science) GPA: 4.00/4.00
High School Affiliated to Renmin University of China (RDFZ), Beijing, China *September 2021 – July 2024*
Advanced Placement (AP) Program; *AP Capstone Diploma* GPA: N/A; Straight A student for three years; More than 60% A+

WORK EXPERIENCE

STEM Atlanta Women, Inc., *Finance Optimization Lead*, Atlanta, GA *January 2025 – April 2025*
- Applied RFM analytics for donor segmentation and implemented Lean Six Sigma's DMAIC framework to boost ROI and donor retention
- Launched a new STEM product line—covering product development, pricing, marketing, and distribution—to diversify revenue streams
- Deployed financial models to optimize resource allocation, driving an extra $500K in annual revenue and securing 10+ corporate sponsors

Crossroads Community Ministries, *Consultant*, Atlanta, GA *October 2024 – Present*
- Developed software that integrates Georgia HMIS systems with Google Sheets to analyze and track data points and case notes
- Designed unified Power BI dashboards to streamline workflows, optimize service delivery, and enhance guest experience

PROJECTS

Deep Learning Based Stock Prediction, *Project Leader*, Atlanta, GA *January 2025 – Present*
- Built and trained a custom three-layer CNN in TensorFlow to detect patterns in candlestick price charts for stock prediction
- Applied transfer learning with EfficientNet and conducted performance benchmarking to identify the most effective architecture
- Performed sentiment analysis on financial news by fine-tuning RoBERTa transformer model
- Integrated CNN and RoBERTa outputs into a unified predictive framework and rigorously backtested on historical stock data
- Developed a full-stack web application displaying real-time stock predictions using Vue.js, Vite, FastAPI, and Polygon API, integrating our models for backend inference, enabling dynamic visualization of model outputs for user-specified timeframes

Sign Sync—Android App for Real-Time ASL Interpretation and Learning, *Android Developer*, Atlanta, GA *January 2025 – Present*
- Developed an Android application in Android Studio with MVVM architecture, managing version control and collaboration with GitHub
- Integrated Firebase for data management, and Jitsi Meet SDK for real-time video calls between deaf individuals and ASL interpreters
- Built an ASL recognition module using OpenCV and TensorFlow for real-time sign language translation and accessibility

U.S. Real Estate Markets Analysis and Forecasting, *Data Analyst*, Atlanta, GA *August 2024 – December 2024*
- Partnered with Zillow to access APIs and web-scraped HTML pages, extracting ~1.1M data points to construct robust training datasets
- Applied regression analysis and machine learning algorithms with Sklearn and SciPy; fine-tuned SARIMA models with Statsmodels; predicted the real estate price trends and market dynamics in time series; visualized insights with GeoPy, Plotly, Seaborn, and Matplotlib
- Designed an intuitive graphical user interface to visualize and interact with real estate price forecasts for targeted cities and future periods
- Presented price trendlines through a web interface built with Chart.js, HTML, and CSS, enabling users to filter data using dropdown menus

Wind Turbine Design and Construction, *Participant*, Beijing & Shaanxi, China *March 2022 – February 2023*
- Designed wind turbine by Autodesk Fusion 360; produced model by 3D printer; tested efficiency in simulated wind field
- Collaborated with Tencent Foundation to build custom turbines in Shaanxi, generating energy to raise funds for local poverty alleviation

RESEARCH EXPERIENCE

ISyE Summer Undergraduate Research Scholars Program, *Undergraduate Student Researcher*, Atlanta, GA *May 2025 – Present*
- Explored kernel-based statistical metrics to develop robust learning algorithms with provable risk and generalization bounds

Georgia Tech Vertically Integrated Projects, *Undergraduate Student Researcher*, Atlanta, GA *January 2025 – Present*
- Worked on a full-stack project utilizing Kubernetes for container orchestration to support the Apache Airavata MFT framework
- Fine-tuned and conducted inference with NASA Prithvi WxC model on Georgia Tech PACE HPC cluster using Slurm for job scheduling

Neuron-Level Interpretability, *Researcher in GT Math Modeling Student Research Group*, Atlanta, GA *September 2024 – Present*
- Developed a LeNet-5 architecture and trained with MNIST; refined the CNN to handle more complex CIFAR-10 with improved accuracy
- Quantified the level of mono/poly-semanticity and developed metrics based on neuron activation distributions using PyTorch
- Discovered the influence of optimizers (SGD, Adam), weight decay, and normalization methods on semanticity and feature sensitivity

LEADERSHIP

New Student Orientation Leader, **GT New Student & Transition Programs – FASET** *February 2025 – Present*
Student Representatives, **Institute of Industrial and Systems Engineers – Operational Excellence Board** *March 2025 – Present*
- Evaluated high-impact project proposals and coordinated logistics for IISE Annual Conference & Expo 2025 with cross-functional teams
- Contributed to the successful execution of nationwide initiatives advancing innovation and operational excellence within ISyE community

President, **RDFZ (School) Orchestra** *September 2022 – June 2024*
- Volunteered several performances at retirement homes; organized orchestra for school concerts; presented to hundreds of students

Interpreter, **Beijing Organizing Committee – 2022 Olympic and Paralympic Winter Games** *September 2021 – February 2022*
- Served as guide and interpreter to visitors at Olympic venues, e.g., Big Air Shougang; livestreamed on Sina and gained 50K+ viewers

SKILLS

Technical: Python, MySQL, Java, React.js, Express.js, Node.js, HTML, XML, CSS, MongoDB, Firebase, Git, Hugging Face, MATLAB, Linux
Languages: Chinese (native), English (fluent), French (basic)

Concepts: Data Science, Machine Learning, NLP, Deep Learning, LLM, Generative AI, Time Series, Regression, CNN, RNN, Decision Tree, GUI
Additional: Mathematics Modelling, Optimization, Problem Solving, System Design, Public Speaking, Meeting Minutes, Case Studies

HONORS & AWARDS

- Collegiate Quant League (Regional Finals), 16th out of 167 contestants (invited for Grand Finals on May 23rd)
- British Physics Olympiad (Round 1), Global Top Gold
- High School Mathematical Contest in Modeling, Honorable Mention
- International Astronomy and Astrophysics Competition (Final Round), Gold Honor (Top 7%)
- British Mathematical Olympiad (Round 1), Merit Award