

## JESSICA JIA HUI TING

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### EDUCATION

#### GEORGIA INSTITUTE OF TECHNOLOGY

Atlanta, GA, United States

**Master of Science, Analytics (GPA: 4.00/4.00)**

2024-Present (Expected Graduation: Dec 2025)

- Relevant coursework: Data and Visual Analytics, Operations Research for Supply Chains (Linear Programming and Optimization), Machine Learning, Graduate Algorithms, High-dimensional Data Analytics (Splines, Image, Tensor Analysis)

#### NATIONAL UNIVERSITY OF SINGAPORE

Singapore

**Bachelor of Social Sciences, Economics (Honors), Highest Distinction (GPA: 4.88/5.00)**

2015-2019

- Specialization: Quantitative Economics; Minor: Statistics, University Scholars Program
- Honors Thesis: "Dynamic Conditional Score Models: Forecasting Volatility of Exchange Rates"
- Awards: Dean's Scholars List (Top 1%, 2 semesters), Dean's List (Top 5%, 4 semesters); University Scholars Program Honor Roll (2016), Senior Honor Roll (2017), President's Honor Roll (2019)

### WORK EXPERIENCE

#### MINISTRY OF TRADE AND INDUSTRY

Singapore

**Senior Economist (Economic Issues and Insights/Growth Income and Productivity Unit)**

May 2020-Aug 2024

- Drove data-intensive research using causal inference and statistical modeling (STATA, R) to support evidence-based policy; partnered with cross-agency teams to deliver high-impact insights. Key projects:
  - Estimated [wage effects of university cohort expansions](#) using cohort-based DiD to inform education policy
  - Analyzed R&D and innovation patterns from administrative and survey data; applied dynamic panel models to uncover public-private R&D spending relationships to support innovation policy
  - Identified [productivity drivers](#) (e.g., [intangible assets](#)) using shift-share and growth accounting decomposition; automated analytical pipelines for updating similar analyses
  - Built Tableau dashboards to monitor labor market trends during COVID-19 for quicker policy response
- Developed macroeconomic assumptions and scenarios for national long-term infrastructure planning
- Mentored interns on econometric, coding, and applied policy work; supported annual Budget and COS processes

### PROJECTS

#### Context-Aware Sentiment Analysis of Yelp Reviews using Fine-Tuned DistilBERT

- Fine-tuned an LLM (DistilBERT) to predict positive reviews (4+ stars), incorporating contextual tokens from user and business data. Used stratified sampling, class-weighted loss, and F1-optimized thresholds to handle class imbalance
- Improved accuracy from 71% to 93%, and F1 score from 74% to 95%; used TF-IDF to identify key sentiment drivers across time, location, and business traits

#### Outage Detection using Cox Communications Customer Interaction Data (Placed 3<sup>rd</sup> for MSA Project Week)

- Processed high-volume multichannel customer interaction logs and used anomaly detection models (MSTL, Isolation Forest) to detect latent outages not explicitly labeled in the data
- Developed a rolling-window Random Forest model for near real-time outage prediction, enabling faster remediation

#### SNAP US Patent Citation Network Analysis

- Analyzed a large-scale citation graph (3.7M nodes, 16.5M edges) to identify key patents and innovation clusters
- Used degree-based sampling to optimize computation efficiency, and applied the Louvain algorithm for community detection, PageRank to identify influential patents, and NetworkX for visualization

### PROFESSIONAL DEVELOPMENT

- Python Programming and Unstructured Text Analytics** (Civil Service College Singapore) Feb 2023
- Machine Learning and Big Data CEP, ASSA Annual Meeting** (American Economic Association) Jan 2023
- Using Text as Data: Methods and Applications** (Barcelona School of Economics) Jul 2022

### SKILLS

**Programming & Software:** Python (NumPy, Pandas, Scikit-learn, PyTorch, Matplotlib, Seaborn), SQL, STATA, R, Tableau, Git; exposure to JavaScript, D3, AWS, GCP, PySpark, Spark, Databricks, Azure ML

**Analytical Skills:** Causal Inference (DiD, Matching [CEM, PSM], RD, Synthetic Controls, A/B Testing, Survival Analysis); Machine Learning (Supervised/Unsupervised Learning, Neural Networks, Regression, Classification, Clustering, Random Forest, Anomaly Detection, Time Series, Image, Network Analysis); NLP/LLM (Sentiment/Topic Analysis, Transformers [BERT, DistilBERT])