

QINYANG YU

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EDUCATION

Duke University

Master of Science in Economics and Computation

Cumulative GPA: 3.870/4.00

Durham, United States
Aug.2024 – May.2026 (Expected)

The Chinese University of Hong Kong, Shenzhen

Bachelor of Business Administration with Honours, First Class

Major in Economics (Economic Science Stream), Minor in Mathematics and Applied Mathematics
Major GPA: 3.886/4.00, Cumulative GPA: 3.765/4.00

Shenzhen, China
Sep.2020 – Jul.2024

New York University Shanghai

Summer Institute in Computational Social Science (SICSS) - NYU Shanghai
Summer School in Applied Social Science Research Methods (Advanced Courses)

Shanghai, China
Jun.2025
Jul.2025

The University of Cambridge

The Online Summer Research Programme at Pembroke College (First with Distinction)

Online
Jun.2023 – Jul.2023

HONORS & AWARDS

Dean's Research Award for Master's Students	2025–2026, Duke University
International Conference Travel Grant (Department of Economics)	2025–2026, Duke University
Economics Master's Scholarship Award	2024–2026, Duke University
Undergraduate Research Award (19th, 20th, 21st Round)	2022–2023, CUHKsz
Academic Performance Scholarship	2020–2021, 2021–2022, 2022–2023, CUHKsz
Dean's Honor List	2020–2021, 2021–2022, 2022–2023, CUHKsz
Master's List Award of Muse College: Whole-person Development Star	2020–2021, CUHKsz
Merit-Based Entrance Scholarship	2020–2024, CUHKsz

QUANTITATIVE COURSEWORK

Economics & Social Science: PhD Microeconomics, PhD Econometrics, Advanced Macroeconomics, Game Theory, Policy Evaluation & Causal Inference, Experimental Design, Text Analysis, Social Network Analysis, Large Language Models

Mathematics: Calculus, Linear Algebra, Mathematical Analysis, Functional Analysis, Topology & Geometry, Ordinary Differential Equations (ODE), Optimization, Numerical Analysis, Complex Variables, Abstract Algebra, Nonlinear Dynamics & Chaos

Statistics & Computer Science: Probability, Stochastic Processes, Time Series, Discrete Mathematics, Advanced Algorithms, Machine Learning, Deep Learning, Graph Analysis, Causality with Explanation & Fairness, Natural Language Processing

CONFERENCES & PUBLICATIONS

Who Gets the Blame? A Structural Theory of Scapegoating in Social Networks

- Accepted for Presentation at *NetSciX 2026* - International School and Conference on Network Science
- Presented at *Complex Networks 2025* - The 14th International Conference on Complex Networks and their Applications
- Presented at 2025 Missouri Valley Economic Association (MVEA) Annual Meeting
- Presented at 2025 Gulf Coast Undergraduate Research Symposium (GCURS), Rice University
- Published in the *Duke Journal of Economics* (Vol. 37, Summer 2025)

Pension Policy as a Pathway to Happiness: Insights from China's New Rural Pension Scheme

- Presented at the 2025 Academic Annual Conference of the Chinese Sociological Association
- Presented at the 2024 Gulf Coast Undergraduate Research Symposium (GCURS), Rice University
- Presented at the 2024 Master's Research Seminar, EMAC, Duke University
- Published in the *Fairy Lake Economic Journal*, a student academic journal at CUHKsz

RESEARCH EXPERIENCE

Cluster 1: Networks, Experiments, & Games

Who Gets the Blame? A Structural Theory of Scapegoating in Social Networks [PDF]

Supervised by Duke Prof. Charles Becker

Dec.2024 – Present

- This paper proposed a structural theory of scapegoating focusing on how network positions shapes vulnerability beyond identity bias
- Used game theory to show why scapegoating systematically targets peripheral nodes with low centrality; conducted agent-based simulations under stochastic heterogeneity and identity-structure interactions; delivered interventions for structural inequality
- Yielded an A+ graded course paper; published in *Duke Journal of Economics*; accepted at *Complex Networks 2025* and *NetSciX 2026*

Why Polarization Becomes Slow and Deep: A System Dynamics Model of Perception Delay in Opinion Networks [PDF]

Supervised by Duke Prof. Jiawei Fu

Nov.2025 – Dec.2025

- Integrated a bounded-confidence network model with first-order information delay to capture cognitive inertia in opinion updating
- Simulated how perception delay leads to a “slow–deep” pattern of polarization and why depolarization interventions might fail

Understanding Chinese-speaking Trump Supporters Online: Features, Factors, and Intervention Strategies of Political Opinion Extremism in the X Network during the 2020 U.S. Election [Slides]

Group Project, SICSS, NYU Shanghai

Jun.2025

- This group project analyzed the retweet network and texts of 260 Chinese-speaking Trump supporters on X, explored the relationship between network structure and ideological extremity using LDA, SHAP, and GNNExplainer, and discussed intervention strategies
- Simulated counterfactual network interventions via the Friedkin-Johnsen opinion dynamics model in Python; compared five rewiring algorithms to effectively reduce extremity; contributed to a 20-minute oral and a poster presentation for the Ideathon event in SICSS

Detecting Polarization with Minimal Supervision: Spectral Clustering on Stance-Augmented Embeddings [PDF]

Supervised by Duke Prof. Patrick Wang

Nov.2025 – Dec.2025

- Developed a minimal-supervision method to detect ideological polarization geometrically using spectral clustering in large corpora
- Augmented text embeddings with limited stance labels; showed 10–20% supervision effectively recover the latent two-camp structure

Network Experiments under Dynamic Treatment Diffusion: Design and Estimation for Bias Reduction [PDF]

Supervised by Duke Prof. Sudeepa Roy

Mar.2025 – May.2025

- Simulated the design and analysis of network experiments under treatment diffusion to reduce bias in estimating ATE
- Introduced the Independent Cascade Model (ICM) for treatment diffusion; compared random vs. cluster assignment paired with individual vs. neighborhood-based estimators; explored alternative diffusion patterns via the Linear Threshold Model (LTM)
- Found that cluster randomization combined with neighborhood-based estimators effectively reduces bias and improves accuracy, particularly when treatment or spillover effects are strong; final report scored 39/40

Government Endorsement and Voter Skepticism: An Experiment of Selective Disclosure in Political Communication [PDF]

Supervised by FSU Prof. Pellumb Reshidi

Mar.2025 – May.2025

- Investigated how explicit knowledge of government bias shapes voter skepticism under truthful yet selectively disclosed information
- Proposed a sender–receiver communication game; designed an experiment (neutral vs. biased government) to test equilibrium selection
- Linked information disclosure and sender credibility to experimental findings on the interactive effects of bias and transparency in collective decision-making; proposal scored 94/100, coding 89/100, and paper 91/100

Lawful Roots, Lawless Routes: The Paradox of Litigation-Related Petitions in China [PDF]

Supervised by CUHKsz Prof. Yangbo Song

Sep.2023 – Dec.2023

- Modeled why litigation-related petitions, despite clear legal boundaries, are more likely to escalate into unauthorized forms
- Collected 5-year local government petition data and 4 official interviews; Constructed a Bayesian learning process and analyzed comparative statics; revealed a amplification mechanism where petitioners misinterpret legal signals and form biased posteriors
- Proposed strategies to resolve conflicts and preserve social order by adjusting information delivery

Cluster 2: Applied Econometrics, Policy, & Development

Pension Policy as a Pathway to Happiness: Insights from China's New Rural Pension Scheme [PDF]

Coauthored with Cambridge Dr. Saite Lu

Aug.2023 – Present

- Extended subjective well-being (SWB) to three OECD-defined sub-dimensions (cognition, affect, eudaimonia) and sub-components
- Processed CFPS cross-sectional data; exploited a Regression Discontinuity Design (RDD) to estimate the causal impact of China's New Rural Pension Scheme (NRPS) on SWB among rural elderly residents, with stronger gains in affect and eudaimonia
- Conducted validity and robustness checks; identified multi-dimensional heterogeneity across education, family, social class, and regions
- Completed a Cambridge Summer Program working paper with distinction; published in CUHKsz's *Fairy Lake Economic Journal*

On the Development Path of Hong Kong and Singapore Economy: Is the Industrial Policy Important? [PDF]

Supervised by CUHKsz Prof. Chunrong Ai

Jun.2022 – Jul.2023

- Investigated how differences in industrial policy shaped industrial structure and economic development in Hong Kong and Singapore
- Collected and Visualized data from World Bank and government yearbooks; Quantified divergence and generated policy dummies; estimated a structural VAR with exogenous shocks and analyzed IRFs and variance decomposition under two Cholesky orderings
- Performed ADF unit-root and Granger-causality tests; selected optimal lags via AIC/SBC; ran residual and stability diagnostics
- Delivered policy recommendations on manufacturing and industrial coordination; received 19th–21st Undergraduate Research Awards

Predicting Default Rate of Lending Club Loans: Lasso-Penalized Logistic Regression and Nonlinear Methods [PDF]

Supervised by CUHKsz Prof. Qihui Chen

Dec.2022

- Constructed training/test splits and visualized multicollinearity in R; fitted lasso and elastic-net logistic models to handle high dimensionality; tuned λ via cross-validation and the one-standard-error rule; plotted lasso paths and ROC curves for model selection
- Compared linear vs. nonlinear models (RF, GNN) using specificity, accuracy, and time complexity; achieved project score of 96.6/100

Total Factor Productivity and Social Capital

Research Assistant, Supervised by Cambridge's Dr. Saite Lu

Aug.2023 – Jun.2024

- Computed weighted averages of trust variables in STATA; merged panel data across European NUTS2 regions; identified 17 controls
- Applied OLS, two-way fixed effects, system GMM, and semiparametric regressions; found positive impacts of social trust on TFP

TEACHING EXPERIENCE

COMPSCI 230: Discrete Mathematics for Computer Science [Link]

Spring.2025

Instructor: Duke Prof. Alex Steiger

- Led 13 recitation and 1 exam review sessions; designed 3 exercise sets; created rubrics; graded 10 assignments and 3 exams; Held OH

ECO 4010: Advanced Microeconomics [Link]

Spring.2024

Instructor: CUHKsz Prof. Yangbo Song

- Organized 10 tutorials and wrote exercise solutions; held weekly 2-hour Q&A sessions and responded to students' inquiries via email

ECO 3011: Intermediate Microeconomic Theory [Link]

Spring.2023

Instructor: CUHKsz Prof. Jieshuang He

- Designed teaching materials using LaTeX; delivered 8 tutorials on consumer and producer theory; held weekly 2-hour Q&A sessions

ADDITIONAL INFORMATION

Languages: English (Proficient: IELTS 7.5, GRE 325 & V157+Q168+AW4.5), Chinese (Native)

Computer Skills: Python, R, STATA, MATLAB, oTree, HTML, EViews, LaTeX

Interests: Analytic Philosophy (Meta-Ethics, Theory of Knowledge/Epistemology), Cuisine (Chinese, Italian, French, American, Japanese), Pop Music, Literary Compositions, Badminton, Volleyball, Teaching