

Xiaochen ‘Kev’ Gao

Scheller College of Business
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ACADEMIC EXPERIENCE

Postdoctoral Fellow, Scheller College of Business, Georgia Institute of Technology 2025–present

- Supervisors: [Karthik Ramachandran](#), [Raghupathy Sivakumar](#)

Research Associate, Rady School of Management, University of California, San Diego 2023–2025

EDUCATION

Ph.D., Innovation, Technology, and Operations, Rady School of Management

University of California, San Diego, La Jolla, CA 2023

- Committee Chair: [Vish Krishnan](#)
- Committee Members: [Hyoduk Shin](#), [Sanjiv Erat](#), [Joel Watson](#), [Jingbo Shang](#)

Master of Philosophy, Industrial Engineering and Logistics Management

The Hong Kong University of Science and Technology, Hong Kong 2014

Master of Science, Civil and Environmental Engineering

University of California, Berkeley, Berkeley, CA 2011

Dalian Maritime University, Dalian, Liaoning, China

- *Bachelor of Engineering*, Transportation Management 2010
- *Bachelor of Engineering*, Logistics Management 2010

PUBLICATIONS AND WORKING PAPERS

- Xiaochen Kev Gao, Sina Khorasani, Vish Krishnan, Lakshmi Nittala, Siqi Wang, A Machine Learning Framework for Project Performance Prediction, Interpretation, and Inference, Major Revision, *Manufacturing & Service Operations Management*

- Predicts, interprets, and infers project performance from high-dimensional U.S. federal contract data; models tailored to the structure of procurement data significantly improve accuracy on both cost and schedule overrun.
 - Performance incentives backfire under fixed-price contracts, significantly raising both cost and schedule overrun, and fail to mitigate either under cost-type contracts; estimated with causal machine learning and robust to double machine learning and high-dimensional propensity weighting.
- Xiaochen Kev Gao, Karthik Ramachandran, Raghupathy Sivakumar, From Science to Industry: Quantifying the Commercialization Impact of Scholarly Research, Under Review, *Science*
 - Introduces the Commercialization Impact Factor (CIF), a network-weighted measure of a venue’s contribution to commercialization, capturing both direct industry-facing impact and diffusion impact as upstream science.
 - Built on a citation network of more than 272 million scholarly works, anchored on the 190,000+ works underlying patents absorbed into U.S. industry by corporate, public, and non-profit assignees.
 - Conventional prestige metrics are shown to account for only a small fraction of the variation in venues’ CIF, and are therefore an inadequate guide for commercialization-related policy and decision-making.
 - Xiaochen Kev Gao, Siqi Wang, Sreekumar Bhaskaran, Vish Krishnan, Dealing with Disruption: Product Innovation and Management Under Asymmetric Competition, Under Review, *Management Science*
 - Develops a game-theoretic model of low-end disruption in which the disruptor enters with an asymmetric accessibility advantage and can close the quality gap once the incumbent is displaced from the low end.
 - Studies the incumbent’s incremental innovation and product strategies as defenses against disruption, jointly with its anticipation of the disruptor’s post-displacement quality catch-up.
 - Identifies conditions under which an incumbent must be both informed and aggressive in going low to achieve both later low-end displacement and higher profit together; and quantifies the cost of misjudging the disruptor: for an uninformed incumbent no product strategy is both profit-maximizing and displacement-detering, and it is misled toward conventional responses and a sub-optimal product strategy.

- Xiaochen Kev Gao, Vish Krishnan, Combining Human Domain Expertise with Deep Learning Algorithms to Predict Patent Approvals, Reject and Resubmit, *Management Science* — rejected for fit by the Special Issue in Human-Algorithm Interaction, with an invitation to resubmit to the main journal
 - Asks whether algorithmic prediction of individual patent claim approval can reduce the time and legal cost of preparing an application, where an average U.S. filing runs \$50-60K.
 - Even the best deep learning models are seriously limited by the contextual demands of patent assessment; combining human domain expertise with a graph-based approach substantially improves the claim approval prediction rate.
- Xiaochen Gao, Feng Yao, Kewen Zhao, Beilei He, Animesh Kumar, Vish Krishnan, Jingbo Shang (2024), Beyond Scaling: Predicting Patent Approval with Domain-specific Fine-grained Claim Dependency Graph, *Proceedings of the 62nd Annual Meeting of the Association for Computational Linguistics (ACL 2024), Volume 1: Long Papers*, 5218–5234
- Xiaochen Gao, Zhaoyi Hou, Yifei Ning, Kewen Zhao, Beilei He, Jingbo Shang, Vish Krishnan (2022), Towards Comprehensive Patent Approval Predictions: Beyond Traditional Document Classification, *Proceedings of the 60th Annual Meeting of the Association for Computational Linguistics (ACL 2022), Volume 1: Long Papers*, 349–372
- Ruina Yang, Xiaochen Gao, Chung-Yee Lee (2017), A novel floating price contract for the ocean freight industry, *IISE Transactions*, 49(2), 194–208

SELECTED MANUSCRIPTS IN PREPARATION

- Xiaochen Kev Gao, Vish Krishnan, Patent Novelty Assessment and Innovation Success
- Xiaochen Kev Gao, Karthik Ramachandran, Raghupathy Sivakumar, Researcher Career Incentives and Commercialization Impact

CONFERENCE PRESENTATIONS

Coordination Mechanisms for Empty Container Repositioning

- INFORMS Workshop on Maritime Transportation, Pacific Grove, CA, June 2013
- POMS Hong Kong Conference 2014, Hong Kong, January 2014

Dealing with Disruptions: Product Management Strategies (with varying titles)

- INFORMS 2018 Annual Conference, Phoenix, AZ, November 2018
- California OR/MS Day, UC Irvine, May 2019
- INFORMS 2020 Annual Conference (Virtual), November 2020
- POMS 2021 Annual Conference (Online), May 2021

Towards Comprehensive Patent Approval Predictions: Beyond Traditional Document Classification

- ACL 2022: 60th Annual Meeting of the Association for Computational Linguistics (Virtual), May 2022

A Machine Learning Framework for Project Performance Prediction, Interpretation, and Inference (with varying titles)

- INFORMS 2022 Annual Conference, Indianapolis, IN, October 2022
- INFORMS 2024 Annual Conference, Seattle, WA, October 2024
- INFORMS 2025 Annual Conference, Atlanta, GA, October 2025

TEACHING EXPERIENCE

Student evaluations (UC San Diego Instructional Assistant evaluations, selected sections): 91% agree or strongly agree across all evaluation items, with 1.6% negative responses; 103 respondents across 8 evaluated sections.

The Hong Kong University of Science and Technology, Teaching Assistant

- IELM 2200, Engineering Management, Spring 2013

University of California, San Diego, Teaching Assistant

- MGT 135, Federal Taxation - Companies
 - Fall 2014, Spring 2015
- MGT 413, (MBA) Operations, Information Systems, and Data Analysis
 - Winters 2015, 2019, 2020, 2021, 2022
- MGT 403, (MBA) Quantitative Analysis
 - Falls 2017, 2018
- MGT 451, (MBA) Technology-Innovation Strategy

- Winter 2018
- MGTA 451, (MSBA) Business Analytics in Marketing, Finance and Operations
 - Fall 2020
- MGTA 457, (MSBA) Business Intelligence System
 - Spring 2018
- MGTA 453, (MSBA) Business Analytics
 - Falls 2018, 2019, 2020, 2021, 2022
- MGTA 456, (MSBA) Supply Chain Analytics
 - Winter 2019
- MGT 459, (MBA) Topics in Innovation: Innovative Digital Product Management
 - Springs 2019, 2020, 2021, 2022
 - Developed and supervised the course project to support students with UI/UX design, prototyping, vite coding, and usability testing experience
- MGT 459, (MBA) Topics in Innovation: Venture Innovation, Growth Strategy, and Simulation
 - Summers 2019, 2020, 2021, 2022
- MGT 412, (MBA) Lab to Market: Model Analysis
 - Spring 2019
- MGTF 407, (MFin) Valuation in Corporate Finance
 - Winter 2020
- MGTA 495, (MSBA) Special Topics: Big Data Technology and Business Applications
 - Winter 2021
 - Designed a data engineering pipeline course project on Snowflake Data Cloud, focusing on ETL (Extract, Transform, Load)
- MGTA 415, (MSBA) Analyzing Unstructured Data
 - Winters 2022, 2023
- MGT 456, (MBA) Innovation Product and Program Management
 - Spring 2023

MISCELLANEOUS RESEARCH EXPERIENCE

The Hong Kong University of Science and Technology

2012–2014

Research Assistant, Institute of Logistics and Supply Chain Management

Hong Kong Government Theme-Based Research Project on ocean container transport logistics: empty container repositioning under decentralized shipping-company structures, and contract design for container contract default; industry data collection on repositioning costs.

University of California, Berkeley

2010–2011

Graduate Student Researcher, California Institute for Innovative Transportation

Caltrans-funded evaluation of microscopic traffic simulation for Corridor System Management Plans.

Dalian Maritime University

2008–2010

Research Assistant, Transportation Planning Institute

Urban transportation network modeling and optimization; GIS data processing and development of a GIS analysis tool.

TECHNICAL SKILLS

- Extensive experience in computing infrastructure, Linux server administration (15+ years), computer networking; fundamental and system programming languages: Rust, C#.
- Comprehensive and deep knowledge of full data science stack: Python (15+ years), R, Julia, MATLAB, Mathematica, SageMath, PyTorch; big data engineering stack: PostgreSQL, NoSQL (such as MongoDB, Elasticsearch), Apache Spark, Snowflake.
- Product UI/UX prototyping (e.g., Figma), cloud infrastructure and architecture, DevOps/AIOps.