

Jinyong (Edward) Sung

University of Technology Sydney (UTS) | Institute for Sustainable Futures (ISF)

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Profile

- ✓ PhD researcher (**UTS Research Excellence Scholarship recipient**) with a strong focus on **economic analysis** and **quantitative research** to support **evidence-based policy decision** at UTS Institute for Sustainable Futures (ISF)
- ✓ +10 years of work experience in **corporate finance and management consulting at Global energy/financial companies** and the **U.S. Top-tier/Ivy League education**; and Bilingual in English and Korean
- ✓ Core competencies: Machine & Deep Learning | Energy & Financial Modelling | Corporate Strategy

Education

University of Technology Sydney, Institute for Sustainable Futures Sydney, NSW, Australia

Ph.D. in Sustainable Futures – Energy, specialising in Energy Economics, Policy & Modelling Feb 2022 - Aug 2025

Research on innovative hybrid machine/deep learning and econometric modelling for energy economics and policy

- Supervisory panel: 1. [Principal supervisor] Prof. **Xunpeng (Roc) Shi** - PhD in Economics, UTS ACRI
2. [Co-supervisor] Prof. **Sven Teske** - PhD in Engineering & Economics, UTS ISF
3. [Research advisor] Dr. **Mengheng Li** - PhD in Econometrics, Senior Lecturer, UTS Business School
- Research field subject result: Econometrics (Grade: High Distinction)

Johns Hopkins University

Baltimore, MD / Washington, DC., USA

MBA/MA Dual Degree, specialising in Energy & Finance

Aug 2010 - May 2013

- M.A. in International Economics & International Relations with a focus on Energy, Resources, & Environment – School of Advanced International Studies (SAIS), Washington, DC.
- MBA with a focus on Finance and Energy & Environment – Carey Business School, Baltimore, MD/Washington, DC.

Brown University, School of Engineering

Providence, RI, USA

M.S. in Innovation Management and Entrepreneurship Engineering

Aug 2007 - May 2008

Purdue University, College of Engineering

West Lafayette, IN, USA

B.S. in Industrial Engineering (Major) & Mathematics (Minor)

Aug 2005 - May 2007

Completed 4-year program in 2 years through transfer credits from a top-tier Korean engineering university and Purdue Wave Exams.

Fields of Interest

Energy Economics and Policy, Machine and Deep Learning, Time Series Analysis, Applied Economics

Research

Publication (Job market paper)

- Sung, J., Shi, X., Teske, S., & Li, M. (2024). Chinese natural gas phase-out pathways: A novel hybrid scenario-specific projection approach to achieve Net Zero. *Accepted, Energy, 2025*

Working papers

- Sung, J., Shi, X., Teske, S., & Li, M. (2024). Identifying key natural gas drivers towards China's carbon neutrality through a novel temporal shrinkage framework. *Submitted (Revise & Resubmit)*
- Sung, J., Shi, X., Teske, S., & Li, M. (2025). Carbon-neutral planning framework for China's near-term natural gas demand: A neural-enhanced hybrid statistical-deep learning forecasting approach. *Submitted (Under Review)*
- Sung, J. (2025). Opportunities for Australia amid China's carbon-neutral transition: Input-Output approach with analysis of Australian renewable potential *Submitted (Under Review)*

Non-academic work

- Shi, X. & Sung, J. (2023). Australia's natural gas security policy spills over the region. *East Asia Forum post*

Awards

- Australian Government Research Training Program Stipend (**UTS Research Excellence Scholarship** for highly ranked, newly-commencing doctoral students) / Fee Offset Scholarship, UTS, 2022-2025
- **Vice Chancellor's Conference Fund 2024** of the 41st USAEE/IAEE Conference, UTS, 2024
- **Certificate of Appreciation** in recognition of high-performing work at SK advanced (SK Group's Chemical arm), 2017
- **SAIS Summer Internship Fund**, Johns Hopkins School of Advanced International Studies, 2012
- **Research Assistantship**, Johns Hopkins Carey Business School, 2010F, 2011S

Professional Experience

- UTS Institute for Sustainable Futures Sydney, NSW, Australia
Research Consultant May 2025 - Present
- Undertaking economic research of an organic waste-based bioenergy project, developing its financial models, and analysing its financial viability through analysis of CAPEX, OPEX, ROI, revenue forecasts, and sensitivity scenarios.
- PhD researcher** Feb 2022 - Present
- Conducting interdisciplinary research on the energy transition in the Australia–China natural gas sector, leading to multiple academic publications and working papers using advanced econometric and machine/deep learning techniques.
- EMS Trust (specializing in investing in education biz & commercial/residential properties) Sydney, NSW, Australia
Investment Director & Co-founder Dec 2018 - Dec 2021
- Developed investment opportunities across commercial and residential property, as well as the education sector; operated the Trust and devised investment strategies in e-learning and online business.
 - Built management system for education business; managed finance and human resources; created comprehensive in-house system—including invoicing—using Excel and financial modelling.
- Mazars Global Infrastructure Finance Pty Ltd Sydney, NSW, Australia
Project Manager, Model Build Team Oct 2017 - Nov 2018
- Built and audited financial models for energy investments; delivered financial modelling training to over 100 professionals across Asia and Australia, enhancing analytical capabilities within investment teams.
 - Modelled renewable energy projects (solar and wind) in Australia and internationally, oil and gas (O&G) projects in the global upstream/midstream sector, a public-private partnership (PPP) project in Gold Coast, Australia, a smelting project in Indonesia, and a corporate model for a mobile services company in Australia.
 - Acted as the communication channel with Mazars' Seoul office for potential energy and infrastructure projects in South Korea.
- SK Advanced (Chemical arm of SK Group; 3-party JV: APC(KSA Chem)-PIC(Kuwaiti Chem)-SK Gas) Seoul, S. Korea
Strategy & Planning Manager, Management Planning Team Mar 2015 - Oct 2017
- Demonstrated people management by aligning diverse stakeholder interests—including board members and shareholders—to support strategic decision-making; conducted quantitative analysis for infrastructure asset acquisitions.
 - Devised a joint venture (JV) implementation plan—including valuation—to establish a three-party JV with two Middle Eastern chemical companies, APC (Saudi Arabia) and PIC (Kuwait), resulting in the successful formation of the JV.
 - Applied people management skills in coordinating with JV board members from Korea, Saudi Arabia, and Kuwait, and crafted key agreements and business systems of the JV.
 - Facilitated in-house corporate business training for junior staff and new joiners.
- SK Gas (Energy arm of SK Group, 3rd Korean conglomerate/top 100 in Fortune Global 500) Singapore/Seoul, S. Korea
Strategy & Planning Manager (Employed by SK Global MBA recruitment), Corporate Strategy team Jun 2013 - Mar 2015
- Revamped financial and economic analytics for \$1B petrochemical (PDH) business; established merchant LPG trading model in collaboration with trading teams in Houston and Singapore.
 - Performed due diligence for \$4B, 2GW coal-fired power plant JV; initiated valuation analyses for 500 MW LPG power plant in Honduras and 1 MW solar and fuel cell power plants in Korea and the U.S.
 - Devised long- and mid-term LPG logistics optimisation plan; evaluated impact of declining oil prices on overall business strategy.
- Center for Climate and Energy Solutions (Top-tier U.S. think tank on Global Climate Change) Arlington, VA, USA
Policy Analyst (MBA/MA Summer Intern), International Policy Research Team Jun 2012 - Aug 2012
- Conducted research on market-based carbon policy instruments in Brazil, China, South Africa, and South Korea, informing global carbon market insights.
- Johns Hopkins Carey Business School Baltimore, MD, USA
Research Assistant under Prof. Mitsukuni Nishida (awarded a Research Assistantship) Sep 2010 - May 2011
- Conducted modelling of economic development and utility infrastructure growth correlations across emerging Asian countries.
- Choong Ang Biotech Co., Ltd Seoul, S. Korea

Equity Financing Project Manager, Strategic Planning Team

Dec 2009 - May 2010

- Led a \$13M paid-in capital increase aligned with the company's equity financing goals.
- Developed equity financing strategies and supervised investor presentations for shareholders and key prospective investors, resulting in the attraction of a \$6M investment fund.

Hanwha Investment & Securities (Financial arm of Hanwha Group, 10th Korean conglomerate)

Seoul, S. Korea

Associate, Investment Banking II Team (Employed by Hanwha Global recruitment)

Jun 2008 - Nov 2009

- Conducted due diligence, developed capital financing strategies, and delivered presentations to CEOs, executives, and shareholders, which resulted in 10 successful capital financing agreements.
- Planned and authored 20 capital financing prospectuses and managed post-issuance follow-up, leading to implementation of 20 projects, including Hanwha Chemical's \$290M paid-in capital increase, Hanil E&C's \$50M capital raise, Samyang Optics' \$10M bond with warrant issuance, and Gamehi's \$17M convertible bond issuance.
- Demonstrated expertise as a financial advisor by advising on an \$11M M&A project (backdoor listing).

NAVER Corporation (Korean internet conglomerate)

Seoul, S. Korea

Summer Intern (Employed by the U.S. Internship Recruitment), Market Strategy Team

Jun 2007 - Aug 2007

- Analysed competitor marketing strategies and assessed societal implications of digital advertising.

Professional Training and Coaching Engagements

Financial modelling trainer, Mazars Global Infrastructure Finance Pty Ltd

- Delivered training courses in Best Practice Project Finance Modelling and Excel Diploma

Oct 2017 - Nov 2018

New employee trainer, SK Advanced

- Delivered induction training on the Propane Dehydrogenation (Petrochemical) business

Mar 2015 - Mar 2017

Presentations

The 41st USAEE/IAEE Annual Conference in Baton Rouge, LA, USA

The 2nd ISETS Annual Conference in Nanjing, China

The 34th CESA Annual Conference in Adelaide, Australia

Seminar (invited guest speaker) in Beijing Institute of Technology, China

Seminar (invited guest speaker) in Yonsei University, South Korea

Knowledge Sharing session in UTS ISF

2024

Knowledge Sharing session in UTS Australia-China Relations Institute (ARCI)

2023

Knowledge Sharing session in UTS ARCI

2022

Postgraduate (PhD) Training

Advanced-level training in Dynamic CGE modeling using GTAP/GEMPACK, *M&S Research Hub, Germany*

Jun 2023

Introductory to Intermediate-level training in CGE modeling using GTAP/GEMPACK, *M&S Research Hub, Germany*

May 2023

Time Series Analysis, *UTS Economics Discipline Group*

Aug 2022 - Dec 2022

Econometrics, *UTS Economics Discipline Group*

Aug 2022 - Dec 2022

Certifications and Professional Recognition

Certificate of Achievement: Introduction to Programming with Python (CS101), *KAIST*

Mar 2024

Certificate of Achievement: Practical Python for AI Coding, *Korea Advanced Institute of Science and Technology (KAIST)*

Jun 2021

Management Consulting Professional (Validated by VETASSESS – Australian Government, ANZSCO 224711)

Jan 2017

Additional Information

Skills: **Python - Deep/Machine Learning (Master)**, MS Excel/VBA, Matlab, MS PowerPoint, GAMS, Power BI, HTML

Citizenship & Residency status: South Korean citizen and Australian permanent resident

References:

Professor Xunpeng (Roc) Shi

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