

An Yu Chen

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Research interests

My research explores questions of how scientific and technological knowledge is generated, flows, and disseminates, with interests in:

- AI-accelerated knowledge diffusion and dissemination between science and technology, leveraging bibliometric data, advanced text analysis, and machine learning to enhance the flow of insights across research and innovation domains
- Strategies for knowledge diffusion and co-evolution of science and technology in addressing societal problems, informed by data-driven insights into mission-oriented research investments.
- Predictive modelling for climate change mitigation technologies, using Random Forest and other machine learning approaches to identify promising scientific and technological trajectories that can accelerate sustainable transitions
- Gender research for inclusivity in scientific and inventive activities, investigating how diverse participation influences technological innovation outcomes

Current Position

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| April 2025-Present | Research Associate in Science of Science MIOIR & AMBS, University of Manchester |
| Sept 2021-Present | Doctoral Researcher in Science, Technology and Innovation Policy MIOIR & AMBS, University of Manchester Thesis Title: The Contribution of Scientific Knowledge to Green Technology Development: Three Essays Supervisors: Cornelia Lawson and Silvia Massini Viva Voce: Passed on July 23rd, 2025 |

Education and Qualifications

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| Sept 2021-Present | PhD in Science, Technology and Innovation Policy MIOIR & AMBS, The University of Manchester Supervisory Team: Prof. Cornelia Lawson and Prof. Silvia Massini Thesis: <i>The Contribution of Scientific Knowledge to Green Technology Development: Three Essays</i> |
| Sept 2013-Oct 2015 | MA in Business Administration in Technology Management College of Technology Management, National Tsing Hua University |
| Sept 2010-Jul 2013 | BA in Economics College of Technology Management, National Tsing Hua University |
| Jan 2015-Jun 2015 | Exchange Student in Management School of Management, Fudan University |

Research Experience

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| April 2025-Present | Research Associate, MIOIR & AMBS, The University of Manchester <ul style="list-style-type: none">- Worked on an EPO funded project with bibliometric metadata from Scopus and OpenAlex and large-scale PhD thesis datasets- Utilised virtualised Linux environments on server to efficiently download and process terabytes of big data- Contributed to drafting detailed methodological reports and analysis strategies, including analysing key patterns and longitudinal trends within large-scale datasets- Attended a policy engagement training workshop hosted by project funders such as the Innovation & Research Caucus, meeting UKRI funders |
| Mar 1 st -31 st 2025 | Visiting Scholar, Politecnico di Milano <ul style="list-style-type: none">- Discussed research on the topic of scientific knowledge's contributions to the development of new technologies with EFI (Entrepreneurship, Finance and Innovation) community- Helped promote collaboration at the PhD level between the Department of Management, Economics, and Industrial Engineering at Polimi and Alliance Manchester Business School, following their signed Memorandum of Understanding |
| May 2024-Dec 2024 | Research assistant, MIOIR & AMBS, The University of Manchester <ul style="list-style-type: none">- Project: UK Doctoral Graduates' Contribution to Innovation funded by IRC/ESRC working with Prof. Cornelia Lawson and Dr Xin Deng- Gained experience with ProQuest download processes and coding in TDM Studio- Verified text mining data by checking Scopus author profiles- Learned how to handle missing data and extract data from websites- Data analysis using R and Python- Wrote reports focusing on the patterns of gender and ethnicity of PhD graduates |
| Apr 2023-Jan 2024 | Research assistant, MIOIR & AMBS, The University of Manchester <ul style="list-style-type: none">- Project: Multiple affiliations in research publications funded by MIOIR working with Prof. Cornelia Lawson and Prof. Hanna Hottenrott- Using PySpark in ICSR Lab to retrieve Scopus data- Worked with ICSR Lab partner and assisted in paper writing- Analysed journal articles with topic modelling using Python- Explored AI-related article in Math journals |
| Sept 2017-July 2020 | Student Research assistant, National Taiwan University <ul style="list-style-type: none">- Assisted in delivering the undergraduate Business Management course- Analysed publication data in Taiwan and researched into management implications- Assisted Journal Editor (Prof. Bou-Wen Lin) for Taiwan Hsinchu Industry and Management Forum |

Teaching

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| Sept 2023-Jan 2024 | Teaching assistant, Computer Science Department, The University of Manchester <ul style="list-style-type: none">- Assisted in delivering the undergraduate Database System course- Marked assignments on database design- Supported lab sessions with Dr. Gareth Henshall |
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Research in progress

Chen, A. Y., Lawson, C., & Massini, S. Understanding the connection: How scientific foundations drive innovation in green technologies? [DRUID conference paper]. Targeted journal: Research Policy (RP).

Chen, A. Y., Lawson, C., & Massini, S. Understanding the characteristics of green scientific knowledge base and connections to technologies [In progress]. Targeted journal: Research Policy (RP).

Chen, A. Y., Lawson, C., & Massini, S. Science Usage in Green Technologies: How do gender dynamics in patent inventor teams influence the use of science? [In progress]. Targeted journal: Research Policy (RP).

Herbert, R., Ding, A., Hottenrott, H., Lawson, C., Chen, A. Y. Understanding simultaneous academia-industry affiliations [In progress]. Target journal: Journal of Technology Transfer.

Conference and Seminar Presentations (recent)

- Gender Homophily in Green Innovation: Do Green Inventors Prefer Science by Their Own Gender? Paper presented at the R&D management conference 2025, Pisa Italy (2025).
- Learning by Association: The Uneven Benefits of AI Adoption for UK PhD Graduates' Performance. UK Doctrack project output presented at the EmELHE Project Kick-off Workshop at the University of Kassel (INCHER Uni Kassel), Germany (2025).
- Gender Homophily in Green Innovation: Do women inventors cite work by women more? Paper presented at the Open innovation in science (OIS) Conference, Vienna (2025).
- The Impact of Scientific Characteristics on Green Technologies: Exploring Novel and Interdisciplinary Knowledge. Paper presented at The workshop of Organisation, Economics and Policy of Scientific Research at the Bureau d'Économie Théorique et Appliquée (BETA) (2025).
- Understanding the characteristics of green scientific knowledge base. Paper presented at EFI (Entrepreneurship, Finance and Innovation) Research Seminar at Department of Management, Economics and Industrial Engineering of Politecnico di Milano (2025).
- The nexus between science and technology: How are synergies manifesting between the scientific foundations and innovations in green technologies? Paper presented at the DRUID24 conference. (2024).
- Understanding the connection: How scientific foundations drive innovation in green technologies? Paper presented at the 10th ZEW Conference on the Economics of Innovation and Patenting, Mannheim, Germany. (2024, September 26-27).
- The nexus between science and technology: How are synergies manifesting between the scientific foundations and innovations in green technologies? EoSI Workshop 2024: 30-31st May, Bordeaux, France. (2024, May).
- How green technology patents link to their scientific knowledge base. Eu-SPRI2023 ECR event, University of Sussex Business School, June 13, 2023. (2023).
- Green technologies and their reliance on science: Research into knowledge bases using patent citations. REGIS Summer School, Sant'Anna School of Advanced Studies, Pisa, Italy, June 5–7, 2023. (2023).
- Green technologies and their reliance on science: Research into knowledge bases using patent citations. 3rd Early Career Researchers Conference – SIIB2023, Manchester, UK. (2023).
- How green technologies rely on a range of fields in science: A research into knowledge base via patent citations. ECC PhD Days Ingenio 2023: Addressing old and new social challenges: Knowledge, policies, inclusion. Valencia, Spain. (2023, February).
- An investigation of interdisciplinary research: Knowledge flows and technological fusion in environmental technologies. Doctoral Symposium, BAM2022 Conference, British Academy of Management, Manchester, UK. (2022).
- An investigation into interdisciplinary trends and processes via social network analysis. Q-KNOW PhD Workshop. Online. (2021)

Research Reports

Lawson, C., Deng, X., Martinez, C., Corsini, A., Panda, S., Shen, T., Chen, A.Y., Ding, L. (2024) STEM Doctoral Graduates and Inventive Activities: DOC-TRACK extension to United Kingdom, First technical Report.

Research Grants

RADMA Postgraduate Research Support Awards, going to R&D management conference in Pisa to present research on *Gender Homophily in Green Innovation: Do women inventors cite work by women more?* (July 2025)

Eu-SPRI circulation scheme-PhD circulation Awards, becoming a visiting PhD student at Politecnico di Milano School of Management through the Eu-SPRI Forum Early Career and PhD Researchers Circulation program, supervised by Prof. Stefano Baruffaldi (March 2025)

RADMA Postgraduate Research Support Awards, “*PhD research expenses for the project titled: How does the interaction between science and technology manifest in emerging and green technologies?*” (July 2024)

Alliance Manchester Business School PhD Scholarships (UoM), “*PhD scholarship for my research titled: How does the interaction between science and technology manifest in emerging and green technologies?*” (2021-25)

German Academic Exchange Service (DAAD), won DAAD summer PhD internship scholarship to University Magdeburg in Germany, supervised by Prof. Sándor Vajna (Summer 2015).

Industry Experience

Aug 2016- Jul 2017

Customer Service Specialist, Booking.com

- Managed XML data files for internal systems and resolved complex customer issues in a multicultural environment.
- Enhanced communication and problem-solving abilities by addressing intricate customer issues in a dynamic, international setting.

Programming skills

R (proficient), Python (proficient; specific in econometrics and tidying data), SQL (novice)

Services and Memberships

Reviewer for Journal of Information Science; Journal of Management and Governance; R&D Management Conference