

Junyi Tao

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Education

Stanford University

M.S. in Symbolic Systems

Expected May 2025

Stanford, CA, USA

Duke University/Duke Kunshan University

B.S. in Interdisciplinary Studies (Data Science)

B.S. in Data Science

GPA: 3.91/4.0 major, 3.91/4.0 cumulative, magna cum laude

Graduation with Distinction

May 2023

Durham, NC, USA

Kunshan, Jiangsu, China

Research Experiences

Jul 2022 -

Apr 2023

Thesis Project | The Presented and Underlying Landscapes of Philosophy

Mentors: Dr. Andrew Janiak, Dr. Charles Chang, and Dr. Daniel Lim [🔗 Web](#)

To reveal perspectives encoded in the scholarly discourse of philosophy; examine the comprehensive and widely influential source in philosophy, Stanford Encyclopedia of Philosophy (SEP).

- Extracted over 70,000 authors and 200,000 sources from the SEP entries and their bibliographies, spanning from the 7th century BC to the present.
- Created a graph database of philosophers and works referenced across entries.
- Discovered both an “over-representation” and a “under-representation”: despite over 60 entries on women philosophers and feminist philosophy, these philosophers are only rarely referenced in discussions on the philosophical topics to which they contributed.

Aug 2022 -

Apr 2023

An Alternative Landscape of Classical Chinese Philosophy

Student Project Manager, Co-PIs: Dr. James Miller and Dr. Charles Chang [🔗 Web](#)

Proposed and lead this project with the co-PIs; co-wrote the grant proposal and got the *DATA+ Grant* from Data Science Research Center, Duke Kunshan University.

- Hold information session, recruited four research assistants, and built two teams (close and distant reading); organize meetings and assign tasks every week.
- Investigate how key concepts in Chinese philosophy, such as ziran (“nature”) and dao (“the Way”), are interpreted differently across contexts and authors.
- Employed natural language processing techniques (topic modeling and word embedding) on pre-Qin philosophical texts, written in classical Chinese, obtained from the Chinese Text Project (ctext.org).

June 2022 -

Present

Reveal Missing Voices in the Philosopher Networks

Project Vox, Supervisors: Dr. Andrew Janiak and Dr. Liz Milewicz [🔗 Web](#)

Featured historically suppressed philosophers with integrated methods of close and distant reading; established a sustainable workflow for future researchers.

- **Distant reading:** Discovered that underrepresented philosophers are isolated and given less credit on Wikipedia through network analysis; recovered 1,444 (9.3%) missing links and demonstrated them with [network visualizations](#).
- **Close reading:** Extracted key concepts and connections from unstructured philosophy corpora; designed the ontology and multiple data input templates.
- **Sustainable integration:** Built an agile graph database and reusable coding pipeline for researcher to easily analyze and visualize philosophers' connections.

Aug 2021 -
Apr 2023

Interdisciplinary Research Networks for Liberal Arts Education

Co-founder and System Designer

[🔗 Info](#) [🌐 Web](#)

Proposed and designed a knowledge mapping system to facilitate interdisciplinary research and curriculum design and to help students find academic mentors.

- Created a visualization of connections between faculty research and teaching interests at Duke Kunshan University, starting with the Natural Science Division.

Summer 2021

A Knowledge Graph Approach for Multi-Relational Scholarly Networks

Student Leader, Interdisciplinary Knowledge Network Lab, Duke Kunshan University

Proposed a project on mapping the relationships between academic entities, including publication, scholars, and topics, using Knowledge Graph (KG).

- Co-led a five-people team to conduct a review of KG techniques, develop the relevant software toolkit (e.g., NetworkX, Neo4j), and design a pipeline for building academic KG from scholarly databases (e.g., Web of Science). [🔗 Web](#)
- Met weekly to discuss the semantic analysis, visualization, and philosophy of knowledge with faculty members in philosophy, cognitive science, sociology, etc.

2020

Interactive Novel | A Journey of Self-Reflection with Sherlock Holmes

Founding Member, Saluzi Technology & Culture Co., Ltd. (Start-up)

Collaborated with co-founders and software engineers to design an app where characters can “chat with” users and guide them to reflect on life purposes; this project was built upon a previous product [Uni](#) [🔗](#) (4.6/5, 4.7k ratings on App Store).

- **Technical:** Assisted in bringing virtual characters “to life” by matching pre-written sentences and the user’s input with Natural Language Processing.
- **Narrative:** Developed the collection of lines and structured it in a way that inspires the user to reflect on their own experiences in the dialogue.

Related Work and Presentations

Reveal Missing Voices in the History of Philosophy with Networks.

With Karen Nielsen (2022, June 24). *Story+ 2022 Research Symposium*, Franklin Humanities Institute. Durham, NC, United States. [📄 Presentation](#)

Institutional Interdisciplinary Knowledge Mapping for Education.

With Yetta He and Zeying Huang (2021, October 29). *Innovation Incubator Fair*, Duke Kunshan University. Suzhou, Jiangsu, China. [📄 Poster](#)

“Visualizing missing voices in the history of philosophy: A network analysis of philosophers on Wikipedia”. 2022. **Tao, Junyi**. [📄 Manuscript](#)

“Business history and social media: A concise review”. 2023. Zeng, Zhaojin, & **Tao, Junyi**. *Management & Organizational History*, 18:1, 24-30. [🔗 Link](#)

Honors and Awards

- 2023 **Graduation with Distinction**, Duke Kunshan University.
- 2022 **Summer Experiential Learning Fellowship**. Duke Kunshan University.
- 2021 **Chinese National College Innovation and Entrepreneurship Program (First Price)**. Project: Interdisciplinary Research Networks for Liberal Arts Education.
- 2019 **Merit-Based Admission Scholarship**. Duke Kunshan University.

Academic Services

- Sep 2022 - Apr 2023 **Student Lab Director** | Digital Humanities Initiative [🌐 Website](#)
Computational Humanities Lab, Duke Kunshan University
Started and co-directed the lab with Dr. Zhaojin Zeng, to incubate interdisciplinary research and foster a digital humanities community.
 - Work with Dr. Zeng on the organization of the lab and academic events including research seminars and reading groups.
 - Contribute to the syllabus and overall design of a graduate-level course: Introductory Digital Humanities.
- Fall 2021 **Teaching Assistant** | Natural Science Division *Supervisor: Dr. Feng Tian*
COMPSCI 201: Programming and Data Structures, Duke Kunshan University
 - Assisted the instructor to design the syllabus, schedule, and weekly assignments.
 - Delivered five laboratory classes to 24 students; prepared 87 pages of materials.
- 2021 **Academic English Writing Coach** | Language and Culture Center
Writing and Learning Studio, Duke Kunshan University
Applied non-directive coaching approaches to help students develop arguments across disciplines; discussed and developed writing resources with faculty coaches.
 - Completed 49 coaching appointments for 23 clients. *Average rating 9.9/10.*
- Summer 2021 **Research Assistant** | Natural Science Division *Supervisor: Dr. Junjie Zhang*
Environmental Research Center, Duke Kunshan University
Helped to design ESG (Environmental, Social, and Governance) metric database to promote carbon neutrality.
 - Analyzed 2015-2020 annual reports of 4000+ Chinese listed companies with topic modeling and sentiment analysis to evaluate their environmental awareness.
- Fall 2020 **Peer Tutor** | Social Science Division *Supervisor: Dr. Ming Gu*

ECON 203: Introduction to Econometrics, Duke Kunshan University

- Hold 21 tutoring sessions for 37 students. *Average rating 4.9/5.*
- Delivered recitation classes on *probability distribution, hypothesis testing, multi-variable regression, prediction, and model diagnosis*, and STATA coding.

Activities

2020 - 2021

Committee Member | Duke China-US Summit

Kunshan Student Ambassador Council (KSAC)

- Collaboratively developed the theme of *Duke China-US Summit 2021 conference*, which attracted 500+ audience and 800+ followers, with 4000+ new exposures.
- Designed a logo and managed the KSAC Blog channel to increase impressions.

Jan 2020

Founding Member and Volunteer

- Founded and oversaw a COVID-19 fundraising, which successfully delivered funds and medical supplies worth 400k RMB (58.2k USD) to five hospitals.
- Supported 20 students in Wuhan by offering free oral English classes online.

Skills

Languages: Chinese Mandarin (native), English (fluent), Classical Chinese (advanced)

Writing: Posted 51 articles online which gained 300k clicks and 3k followers on [Zhihu](#); run a [blog](#) sharing academic writings and philosophical reflections.

Programming

- **Data science:** Python
- **Statistical Analysis:** R, STATA
- **Graph Database:** Neo4j
- **Front-end:** Javascript/HTML/CSS