

Junyi Tao

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Education

Stanford University

M.S. in Symbolic System

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

May 2023

Durham, NC, USA

Kunshan, Jiangsu, China

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.

Research

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.

- Explore implicit connections between philosophical topics, theorems, and philosophers based on the Stanford Encyclopedia of Philosophy (SEP).
- Construct a Neo4j graph database of over 70,000 cited authors and 200,000 sources in SEP which ranges from the 7th century BCE to recent years.
- Systematically trace discussions around AI-related topics and Identify the proportion of women authorship in SEP entries and sources from 1900 to 2022.

Aug 2022 -
Present

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.
- Build a knowledge graph of pre-Qin philosophical texts available on the Chinese Text Project to infer implicit connections between texts, concepts, and authors.
- Experiment with natural language processing methods on classical Chinese.
- To propose a re-categorization of philosophical texts based on the connections.

June 2022 -
Present

Reveal Missing Voices in the Philosopher Network

[Web](#)

Project Vox, Supervisors: Dr. Andrew Janiak and Dr. Liz Milewicz

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.
- Designed research matching metrics and corresponding algorithms to identify scholars with similar research interests across disciplines.

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](#) [Web](#) (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

“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](#)

A Short Review of Scholarly Networks for Knowledge Modeling [🔗 Blog](#)

A Short Review of Machine Learning on Graphs [🔗 Blog](#)

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 and Management.

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

Academic Services

Sep 2022 - Present **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