Isaac (Fengwei) Liu

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Education

Carleton University – Ottawa, ON   Sep. 2025 – Jun. 2027
Master of Cognitive Science, spec. in Data Science
- Coursework: Hyperdimensional Modelling, Neuroscience, Experimental Design and Statistics
- Certificates: User Research – Methods and Best Practices, IxDF, 2025 | Conducting Usability Testing, IxDF, 2025

Shanghai International Studies University – Shanghai, China   Sep. 2020 – Jun. 2024
B.A. in Russian
- GPA: 3.9/4.0
- Coursework: Text Analytics with Python, Statistics with R, Cognitive Semantics of English, Python Programming

University of Hong Kong – Hong Kong   Jul. 2023
Summer Program, AI+Metaverse Value Creation

Kazan Federal University – Kazan, Russia   Sep. 2022 – Jun. 2023
Exchange Program in Philology
- Average Grade: 91.9/100

Research Experience

Inferring Latent Media Biases with Semi-supervised Clustering   Apr. 2024 – Present
Research Assistant under Dr. Noboru Matsuda & Dr. Yuanyuan Liu
- Created an annotated dataset and innovated a **Deep-Learning-based** approach to address the long-standing challenge of **social bias auto-categorization**, bringing a novel perspective to Social Science research.
- Developed discriminative phrase extraction algorithms using spaCy and T-tests, forming novel **sentence embeddings** inspired by TF-IDF.
- Implemented **Feature Learning** with neural classifiers using PyTorch and SBERT, expected to contribute to downstream semi-supervised clustering.
- Coordinated 3 coders in 20 rounds of **iterative coding** and processed agreement statistics, establishing a detailed coding manual and 1,500 high-quality annotated documents.
- Conducted data collection & cleansing by modifying Python web scrapers to tackle anti-scraping measures, building a corpus of over 10,000 high-quality documents.

Diachronic Shifts in Dependency Distance: Evidence from Russian Corpora Nov. 2023 – Apr. 2024
Undergraduate Thesis
- Implemented preprocessing and **syntactic parsing** on a 250-million-token diachronic corpus with spaCy.
- Developed a Python algorithm that computed the Mean Dependency Distance of all sentences. Conducted ANOVA and Tukey HSD analysis in R.
- Interpreted complex empirical findings after comprehensive literature review of working theories.

Multilingualism and Identity: Ethnography of Diasporic Ukrainians in Shanghai Jun. 2022 – Apr. 2024
Research Assistant under Dr. Yuanyuan Liu
- Recruited 6 participants by surveying social media profiles and conducted 6-month **netnographic observations**.
- Led or assisted in 5 semi-structured **interviews**. Designed guided narrative frame writings.
- Created a coding manual and conducted **thematic analysis** to achieve an in-depth understanding of field data.
- Conducted thorough and critical theory review, and took a substantial part in drafting and revising the manuscript.

How Topicality Affects Pronoun Interpretation   Jul. 2023 – Sep. 2023
Research Assistant under Dr. Heeju Huang
- Coded two sentence-continuation experiments which manipulated the topicality of Mandarin sentences via comparison of canonical and left-dislocated structures.
- Distributed experimental surveys to native Mandarin speakers and negotiated monetary incentives.

Work Experience

Bar Staff, Mike's Place Pub, Carleton Graduate Student Association – Ottawa, ON   Nov. 2025 – Present
- Served drink and food orders to the graduate student community, delivering satisfactory customer service.

Data Analyst Intern, Dashmote – Shanghai, China   Mar. 2025 – Present
- Synthesized **data-driven market trends** using **SQL** in AWS Athena to identify market gaps and business opportunities, creating spreadsheets or slides to recommend growth strategies and resolve business challenges.
- Proposed an innovative 4-step **Quality Assurance framework** in Python to analyze 450+ large-scale food delivery datasets, ensuring 100% on-time monthly deliveries of high-quality, accurate data.
- Investigated 121 data discrepancies using **pySpark** as part of delivery maintenance, documented causes and developed solutions in collaboration with data engineers, addressing issues 30% more effectively.
- Updated CASS and product databases in **PostgreSQL** to deploy new features under tight deadlines.

Social Intelligence Analytics Intern, Ipsos – Shanghai, China   Aug. 2024 – Mar. 2025
- Developed Machine Learning models, such as Multilabel SVM Classification and BERTopic, for automatic analysis of large social media data, streamlining social listening workflows by 50%.
- Conducted in-depth **market research**, incl. pain point deep-dive, competitor analysis, and topic analysis. **Created reports** in PowerPoint and Excel to convey actionable insights about market trends and consumer opinions.
- Designed an advanced Share of Voice tracking system in Excel to monitor competitor market presence. Conducted tracking for 12 months while **testing and optimizing** the system. Trained staff on its usage.

Data Processing Intern, Shanghai AI Lab – Shanghai, China   Apr. 2024 – Jun. 2024
- Investigated 300+ data sources in a cross-functional team to collect 30 Tb multilingual, multimodal data.
- Assessed the quality of 1,000 Russian data samples, documenting issues to reduce 30% standardization errors.

Marketing Intern, BeKind, Mars Wrigley – Shanghai, China   Jul. 2022 – Dec. 2022
- Tracked key metrics, incl. conversion rate and ROI to make business recommendations for campaign optimization.
- Reviewed Social Media Marketing strategies and selection of KOLs, cooperating with e-commerce agencies to increase click-through rates by 15%.

Publications & Presentations

Publication

Yuanyuan Liu, **Fengwei Liu**, Zichen Wang, & Ying Mei (2024). Multilingualism, language choice, and identity construction: Diasporic Ukrainians in Shanghai. *Journal of Sociolinguistics*, 28, 42–60. https://doi.org/10.1111/josl.12652

Presentations

Yuanyuan Liu, **Fengwei Liu**, Zichen Wang. (Oral, Jul. 2023) "Diasporic Identity and Multilingualism: Language Choice and Practice of Ukrainians in a Metropolitan City". *27th World Congress of Political Science*. International Political Science Association. Buenos Aires, Argentina.

Fengwei Liu, Zichen Wang. (Poster, Jun. 2023) "'Light' and 'thick' constructing of identities through language: Diasporic Ukrainians in a metropolitan city". *International Symposium on Bilingualism*. Macquarie University. Sydney, Australia.

Extracurricular Activities

Cognitive Science Colloquium Committee, Carleton Cog. Sci. Dept. – Ottawa, ON   Sep. 2025 – Apr. 2026
- Organized and moderated an alumni panel with an audience of 42 people to discuss Cog Sci career development.

Hackathon Organizer, Cog. Sci. Graduate Student Association – Ottawa, ON   Sep. 2025 – Apr. 2026
- Built and coordinated the judging team and adjudication criteria for MindHack, Carleton's first HCI hackathon.

Skills

Programming Languages: Python | SQL | R | LaTeX
Technical Skills: Pandas | sk-learn | PyTorch | spaCy | Nengo | VSA | Spark | AWS | Databricks | MS Office
Quant. Analysis: Machine/Deep Learning | NLP | Classification | Clustering | Regression | Statistics
Qual. Analysis: Interviewing | Usability Testing | Grounded Theory | Ethnography | Content Analysis
Languages: Mandarin & Wu Chinese (native), English (IELTS 8.0), Russian (intermediate), French (beginner)

Honors

- Ontario Graduate Scholarship | *CAD 10,000* 2025 – 2026
- Sino-Russian Government Exchange Scholarship | *USD 12,000* 2022 – 2023
- First-class SISU Excellence Scholarship | *CNY 1,200* 2021 – 2022 Spring & Fall