

Pei-Chi Lo

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SUMMARY

Pei-Chi is a highly motivated computer science PhD graduate with a keen interest in pursuing an academic career in a research university. She was affiliated with the Living Analytic Research Centre (LARC) at Singapore Management University (SMU) and has actively involved in research projects related to smart social and urban analytics. Pei-Chi's research interests lie primarily in knowledge graph-based information retrieval, user profiling, and computational linguistics. She has demonstrated her expertise by publishing papers in internationally recognized conferences and journals, including SIGIR, TOIS, TMIS, and ICWSM.

EDUCATION

Singapore Management University

PhD in Computer Science

Singapore

Jan 2018-Jun 2023

Dissertation: Connecting The Dots for Contextual Information Retrieval

Supervisor: Prof. Ee-Peng Lim

Dissertation Committee:

Prof. Jing Jiang, Prof. Yuan Fang, Prof. Aixin Sun (Nanyang Technological University, Singapore)

National Sun Yat-sen University

M.B.A., Management in Information Systems

Kaohsiung, Taiwan

Sep 2015-Jul 2016

Thesis: Quality Analysis and Prediction of User Reviews Using Discourse Structure

Supervisor: Prof. San-Yih Hwang

B.A., Management in Information Systems

Sep 2011-Jun 2015

PUBLICATIONS

- **Lo, Pei-Chi**, Tsai, Yi-Hang, Lim, Ee-Peng, & Hwang, San-Yih (2023). On Exploring the Reasoning Capability of Large Language Models with Knowledge Graphs. (*Under Consideration*).
- **Lo, Pei-Chi**, & Lim, Ee-Peng (2023). Non-Monotonic Generation of Knowledge Paths for Context Understanding. *ACM Transactions on Management Information Systems* (*Accepted*).
- **Lo, Pei-Chi**, & Lim, Ee-Peng (2023). A Transformer Framework for Generating Context-Aware Knowledge Graph Paths. *Applied Intelligence* (*Accepted*).
- **Lo, Pei-Chi**, Lee, Yang-Yin, Chen, Hsien-Hao, Kwee, Angus Trisnajaya, & Lim, Ee-Peng (2023). Contrastive Learning Approach to Word-in-Context Task for Low-Resource Languages. In *AAAI Workshop on Knowledge Augmented Methods for NLP (KnowledgeNLP-AAAI'23)*.
- Hsieh, Lee-Hsun, Chua, Nam-Chew, Kwee, Angus Trisnajaya, **Lo, Pei-Chi**, Lee, Yang-Yin & Lim, Ee-Peng (2022). Singlish Checker: A Tool for Understanding and Analysing an English Creole Language. In *The 24th International Conference on Asia-Pacific Digital Libraries*.
- **Lo, Pei-Chi**, & Lim, Ee-Peng (2022). Your Cursor Reveals: On Analyzing Workers' Browsing Behavior and Annotation Quality In Crowdsourcing Tasks. *IEEE Access*.
- **Lo, Pei-Chi**, & Lim, Ee-Peng (2022). Contextual Path Retrieval: A Contextual Entity Relation Embedding-based Approach. *ACM Transactions on Information Systems*.
- Silva, Amila, **Lo, Pei-Chi**, & Lim, Ee-Peng (2021). On Predicting Personal Values of Social Media Users using Community-Specific Language Features and Personal Value Correlation. *Proceedings of the International AAAI Conference on Web and Social Media*, 15(1), 680-690.

- **Lo, Pei-Chi**, & Lim, Ee-Peng (2020). Co-Embedding Attributed Networks with External Knowledge. 2020 IEEE International Conference on Big Data (Short Paper).
- **Lo, Pei-Chi**, & Lim, Ee-Peng (2020). Interactive Entity Linking Using Entity-Word Representations. In Proceedings of the 43rd International ACM SIGIR Conference on Research and Development in Information Retrieval (pp. 1801-1804).
- Silva, Amila, **Lo, Pei-Chi**, & Lim, Ee-Peng (2020). JPLink: on linking jobs to vocational interest types. In Pacific-Asia Conference on Knowledge Discovery and Data Mining (pp. 220-232).
- **Lo, Pei-Chi**, & Lim, Ee-Peng (2018). On learning psycholinguistics tools for english-based creole languages using social media data. In 2018 IEEE International Conference on Big Data (pp. 751-760).
- Lai, Chia-Yu, **Lo, Pei-Chi**, & Hwang, San-Yih, Incorporating Comment Text into Success Prediction of Crowdfunding Campaigns (2017). In 2017 Pacific Asia Conference on Information Systems. 156.

RESEARCH EXPERIENCE

School of Computing and Information Systems, SMU

Singapore

PhD Researcher

Jan 2018-Jun 2023

- Proposed Contextual Path Retrieval and Generation problems and designed attention-based generation models to address them
- Developed a transformer-based model for learning contextual semantics of words in Singlish, an English creole language
- Conducted IRB-approved crowdsourcing studies in learning to predict worker annotation quality with behavioral data
- Published two conference papers on contextual semantic learning and one journal paper on crowdsourcing worker profiling, outside of dissertation work

Living Analytic Research Centre, SMU

Singapore

Research Engineer

Jul-Dec 2017

- Collaborated with external research agencies specializing in psychology
- Developed models for learning Singlish words and their meaning from user-generated content, including tweets and online forum posts
- Developed linguistic inquiry and word count toolkit (S-LIWC) to measure psychometric profiles from content generated by Singlish speaking users
- Conducted user surveys to collect user content and profile label data for developing and evaluating prediction models for personality traits.
- Published three conference papers based on the experiments and findings in this project

Department of Information Systems, NSYSU

Kaohsiung, Taiwan

Research Assistant

Jul 2016-Jun 2017

- Collaborated with industry and created a social listening system
- Designed and maintained the system backend, including database system and server deployment
- Developed real-time topic modeling and sentiment detection tools on online forums and news
- Trained and supervised master's and undergraduate students to build a natural language processing web application for academic researchers

Institute of Political Science, NSYSU

Kaohsiung, Taiwan

Undergraduate & Master's Assistantship

May 2015-Jun 2017

- Conducted analysis on human rights interpretation in Chinese politics
- Conducting interdisciplinary research on text mining in political science
- Developed Crawler to gather text data from multiple sources, including *People's Daily*, *Wenweipo*,

- and Chinese judicial documents/court verdicts.
- Analyzed and visualized newspaper articles and official documents with LDA topic modeling
- Mentored post-graduate students to complete projects on political analysis with information technology, including research topic identification, data preparation, and research method design
- Designed and developed web-based text mining tools for researchers in political science domain

SKILLS

- **Language:** English (Full Professional Proficiency), Mandarin (Native), Japanese (Limited Working Proficiency *JLPT N2 Passed*)
- **Programming Language:** Python (Pytorch, Tensorflow, Huggingface), JAVA
- **Website Development Language:** HTML5, CSS, JavaScript, Django, flask, Semantic UI

TEACHING & MENTORING EXPERIENCE

Senior Teaching Assistant

Research Topics in Information Systems, Singapore Management University

Singapore

Apr-Jul 2020

- Organized and led weekly discussions for first-year PhD students on selected research topics
- Evaluated and critiqued students on their presentation skills
- Taught a session on presentation slide planning and design

Graduate Instructor Foundations in Teaching Program (GIFT)

Centre of Teaching Excellence, Singapore Management University

Singapore

May 2020

- Completed pre-training activities including teaching observation and reading assessment
- Undertook training sessions covering teaching foundations, instructional strategies, course planning, and student assessment design
- Passed the post-training assessment which included a 4-minute video presentation on lesson design

Senior Teaching Assistant

IS112 - Data Management, Singapore Management University

Singapore

Apr-Jul 2020

- Assisted lecturers in test and project assessment

Teaching Assistant

MIS205 - Database Management, National Sun Yat-sen University

Taiwan

Jan-Jun 2016

- Assisted lecturers in test and project assessment
- Tutored students and held office hours

Organizer and Lecturer

New Research Assistant Training, National Sun Yat-sen University

Taiwan

Jul-Aug 2016

- Organized and led a six-week training camp for perspective undergraduate and Master's research assistants in the research lab
- Taught training classes including Python programming, MVC web application development, basic Linux system operation, and foundations of data mining
- Planned assessments including assignments and post-training projects

Lecturer

MIS Summer Camp for High Schoolers, National Sun Yat-sen University

Taiwan

Jul 2014, 2015

- Taught lessons on presentation skills

- Planned learning activities, evaluated and provided feedback on campers' presentations

Lecturer

Web Application Design Club, National Sun Yat-sen University

Taiwan

Feb-Jul 2013

- Planned and taught lesson in web application programming, including JavaScript and PHP+MySQL programming
- Mentored junior club members on team projects

AWARDS & SCHOLARSHIPS

- Lee Kong Chian Professorship 2022-23
- Finalist (*A Plug-and-Play Generation Model for Judicial Documents*) [[link to slides](#)], Legal-Tech Hackathon, LawsNote Sep 2021
- PhD Full Scholarships, Singapore Management University 2018-21
- Five-Year BA-MA Program Scholarship, National Sun Yat-sen University 2015-16

GRANTS

- Singlish Learning by Crowdsourcing, DSO National Laboratories, Singapore, **Co-Investigator**, 2020, SGD\$612,300
- Research on Cross-Lingual Opinion Mining, Ministry of Science and Technology (MOST), Taiwan, **Co-author of Proposal**, 2017, TWD\$2,665,000

PROFESSIONAL SERVICES

- **Reviewer.** Frontiers of Computer Science, 2023
- **Reviewer.** Thirty-Sixth AAAI Conference on Artificial Intelligence, 2021
- **Reviewer.** Electronic Commerce Research and Applications, 2021
- **Reviewer.** Thirty-Fifth AAAI Conference on Artificial Intelligence, 2020

REFERENCES

Ee-Peng Lim, Professor of Computer Science

School of Computing and Information Systems, Singapore Management University

(+65)68280781, eplim@smu.edu.sg

San-Yih Hwang, Professor

Department of Information Management, National Sun Yat-sen University

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