Chia-Hsuan Chang

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Citizenship: Taiwan

Research interests

Text Mining, Health Informatics, Data Science, Fairness

Education

2016 – 2021   **National Sun Yat-Sen University** – Kaohsiung, Taiwan
PhD in Information Systems
Dissertation: A Study on Text Analysis Across Languages
Advisor: Professors Hwang, San-Yih. *GPA: 4.1/4.3.*

2015 – 2016   **National Sun Yat-Sen University** – Kaohsiung, Taiwan
MBA in Information Systems
Advisor: Professors Hwang, San-Yih. *GPA: 4.1/4.3.*

2011 – 2014   **National Sun Yat-Sen University** – Kaohsiung, Taiwan
BA in Information Systems
GPA: 3.75/4.3.

Honors and scholarships

2021	Exceptional Doctoral Dissertation (National Sun Yat-Sen University)
2021	Honorary Member (The Phi Tau Phi Scholastic Honor Society of the R.O.C.)
2020	Scholarship (Ministry of Science and Technology, Taiwan) *NT 900,000 for Graduate Students Study Abroad Program (one year).*
2016 – 2020	Industry-Academy Cooperation Scholarship (Ministry of Education, Taiwan) *NT 1,200,000 for four years.*
2016 – 2018	PhD Two-Year Scholarship (National Sun Yat-sen University) *NT 684,000 for two years.*
2015 – 2016	Five-Year BA-MA Program Scholarship (National Sun Yat-sen University) *NT 120,000 for one year.*

Journal articles

2023   **On bridging consumer health search across languages using cross-lingual word space**
Chang, C. H., & Yang, C. C.
Electronic Commerce Research and Applications.

2021   **Topics and Sentiments of Public Concerns Regarding COVID-19 Vaccines: Social Media Trend Analysis**
Monselise, M., **Chang, C. H.**, Ferreira, G., Yang, R., & Yang, C. C.
Journal of Medical Internet Research.

2021   **A word embedding-based approach to cross-lingual topic modeling**
Chang, C. H., & Hwang, S. Y.
Knowledge and Information Systems.

2021   **Learning bilingual sentiment lexicon for online reviews**
Chang, C. H., Hwang, S. Y., & Wu, M. L.
Electronic Commerce Research and Applications.

2021   **What Are People Concerned About During the Pandemic? Detecting Evolving Topics about COVID-19 from Twitter**
Chang, C. H., Monselise, M., & Yang, C. C.
Journal of Healthcare Informatics Research.

Research experience

Feb. 2023 – Present   **Postdoctoral Researcher**
Mentors: Christopher C. Yang (Drexel University CCI).

Oct. 2022 – Jan. 2023   **Postdoctoral Researcher**
Mentors: San-Yih Hwang (National Sun Yat-Sen University).
Developed a prompt method to detect adverse drug effects from social media.

Feb. 2020 – Feb. 2021   **Visiting Ph.D. Student**
Mentors: Christopher C. Yang (Drexel University CCI).
Proposed algorithms to bridge the language gap on consumer health vocabulary and consumer health search. Developed topic identification methods to reveal topic trends from a large scale of COVID-19 tweets.

Teaching experience

Summer 2019 &
Summer 2021

Course organizer & Lecturer, Fresh Undergraduate Training for Text Mining Research (NSYSU TAR Lab)

Organized the curriculum for fresh undergraduates to get familiar with necessary mathematical skills for machine learning, including linear algebra, multivariate culculus, and optimization approach. Guided the paper discussions on the developments of NLP, such as topic modeling, word embedding, and transformer.

Autumn 2017 &
Autumn 2018

Teaching assistant, MIS 532: Process Management in Service Computing (National Sun Yat-sen University)

Taught students to implement microservices (SOAP/WSDL and RESTful API); taught students to deploy microservices using docker and docker-compose.

Spring 2016 &
Spring 2017

Teaching assistant, MIS 205 & MIS 512: Database Management (National Sun Yat-sen University)

Prepared the hand-on materials for helping students learn the CRUD operations in relation database (i.e., OracleDB) and document-oriented database (i.e., MongoDB)

Summer 2016

Course organizer & Lecturer, Fresh Undergraduate Training for Text Mining Research (NSYSU TAR Lab)

Organized the curriculum for fresh undergraduates to learn fundamental knowledge about conducting researches on text mining; taught introduction to clustering algorithms, MongoDB operations, and packages for performing NLP.

Industry experience

Sept. 2016 –
Sept. 2020

Metal Industries Research & Development Centre – Kaohsiung, Taiwan

Graduate Researcher

Designed a social monitoring platform, which aims to predict future trends in metal industry using news, patent documents, and technical reports.

Oct. 2018 –
Feb. 2019

iGroup Asia Pacific Ltd. – Kaohsiung, Taiwan

Graduate Researcher

Performed text analysis on publications of chemical journals. Built an information retrieval system for National Institute for Materials (NIMS) using topic model, word representation learning, and document presentation learning.

Feb. 2015 –   **Advanced Semiconductor Engineering, Inc.** – Kaohsiung, Taiwan
Aug. 2017   Graduate Researcher
Collected textual data from the web and built the MongoDB for persisting data. Developed a Chinese social listening system using sentiment analysis, topic model, and Hashing-based approximate nearest neighbor search algorithms.

Oral presentations

Jun. 2023   Prompting for Few-shot Adverse Drug Reaction Recognition from Online Review
IEEE International Conference on Healthcare Informatics – Houston, USA

Oct. 2020   Employing word mover's distance for cross-lingual plagiarized text detection
Annual Meeting of the Association for Information Science and Technology – Online

July 2019   An approach to cross-lingual sentiment lexicon construction
IEEE International Congress on Big Data (BigDataCongress) – Milan, Italy

July 2018   Incorporating word embedding into cross-lingual topic modeling
IEEE International Congress on Big Data (BigData Congress) – San Francisco, USA

Technical skills

Programming languages
Python, R, Java, Bash, SQL, HTML/CSS/JS

Software
LaTeX, Git, Spacy, HuggingFace Transformer, PyTorch, Keras, Tensorflow, MySQL, MongoDB, Linux, Docker

Medical Language Processing
Universal Medical Language System (UMLS), ICD-10

Languages
Chinese (native), English (fluent)