

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: San-Yih Hwang. *GPA: 4.1/4.3.*
- 2015 – 2016 **National Sun Yat-Sen University** – Kaohsiung, Taiwan
MBA in Information Systems
Advisor: San-Yih Hwang. *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	<p>Instructor, Fresh Undergraduate Training for Text Mining Research (NSYSU TAR Lab)</p> <p>→ Organized the curriculum for fresh undergraduates to get familiar with necessary mathematical skills for machine learning, including linear algebra, multivariate calculus, and optimization approach.</p> <p>→ Guided the paper discussions on the developments of NLP, such as topic modeling, word embedding, and transformer.</p>
Autumn 2017 & Autumn 2018	<p>Teaching assistant, MIS 532: Process Management in Service Computing (National Sun Yat-sen University)</p> <p>→ Taught students to implement microservices (SOAP/WSDL and RESTful API).</p> <p>→ Taught students to deploy microservices using docker and docker-compose.</p>
Spring 2016 & Spring 2017	<p>Teaching assistant, MIS 205 & MIS 512: Database Management (National Sun Yat-sen University)</p> <p>→ 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)</p>
Summer 2016	<p>Instructor, Fresh Undergraduate Training for Text Mining Research (NSYSU TAR Lab)</p> <p>→ Organized the curriculum for fresh undergraduates to learn fundamental knowledge about conducting researches on text mining.</p> <p>→ Taught introduction to clustering algorithms, MongoDB operations, and packages for performing NLP.</p>

Industry experience

Sept. 2016 – Sept. 2020	<p>Metal Industries Research & Development Centre – Kaohsiung, Taiwan</p> <p>Graduate Researcher</p> <p>→ Designed a social monitoring platform, which aims to predict future trends in metal industry using news, patent documents, and technical reports.</p>
Oct. 2018 – Feb. 2019	<p>iGroup Asia Pacific Ltd. – Kaohsiung, Taiwan</p> <p>Graduate Researcher</p> <p>→ Performed text analysis on publications of chemical journals.</p> <p>→ Built an information retrieval system for National Institute for Materials (NIMS) using topic model, word representation learning, and document presentation learning.</p>

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)