Chia-Hsuan Chang

shane.chang.tw@gmail.com • https://ponshane.github.io • 323-528-7943
Citizenship: Taiwan

Research interest

Natural Language Processing, 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*

Research experience

Jun. 2023 – Present	**Remote Research Volunteer** Supervisor: Grace Lu-Yao (Thomas Jefferson University SKCC) → Using electronic health records to improve treatment options for patients who have prostate cancer and lung cancer
Feb. 2023 – Present	**Postdoctoral Researcher** Mentor: Christopher C. Yang (Drexel University CCI) → Investigating potential applications of large language models in the healthcare domain → Studying fairness issue of predictive models deployed in healthcare service
Oct. 2022 – Jan. 2023	**Postdoctoral Researcher** Mentor: San-Yih Hwang (National Sun Yat-Sen University) → Developed a prompt method to detect adverse drug effects from social media → Proposed a topic identification algorithm for multilingual corpus using large language models

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

Peer-reviewed publication

2023   Prompting for Few-shot Adverse Drug Reaction Recognition from Online Review
Chang, C. H., Chang, F. Y., Hwang, S. Y., and Yang, C. C.
IEEE International Conference on Healthcare Informatics – Houston, USA

2023   On Bridging Consumer Health Search Across Languages Using Cross-lingual Word Space
Chang, C. H., & Yang, C. C.
Electronic Commerce Research and Applications (indexing: SCIE, SSCI)

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 (indexing: SCIE)

2021   A Word Embedding-based Approach to Cross-lingual Topic Modeling
Chang, C. H., & Hwang, S. Y.
Knowledge and Information Systems (indexing: SCIE)

2021   Learning Bilingual Sentiment Lexicon for Online Reviews
Chang, C. H., Hwang, S. Y., & Wu, M. L.
Electronic Commerce Research and Applications (indexing: SCIE, SSCI)

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 (indexing: ESCI)

Employing Word Mover's Distance for Cross-lingual Plagiarized Text Detection
2020   Chia-Ming Chang, **Chang, C. H.**, and Hwang, S. Y.
Annual Meeting of the Association for Information Science and Technology – Online

2019   An Approach to Cross-lingual Sentiment Lexicon Construction
Chang, C. H., Wu M. L., and Hwang, S. Y.
IEEE International Congress on Big Data (BigDataCongress) – Milan, Italy

2018	Incorporating Word Embedding into Cross-lingual Topic Modeling

Chang, C. H., Hsu, T. X., and Hwang, S. Y.

IEEE International Congress on Big Data (BigData Congress) – San Francisco, USA

Professional service

2023	**Reviewer**. IEEE Transactions on Knowledge and Data Engineering (TKDE)

Honor and scholarship

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 one year, Graduate Students Study Abroad Program
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

Teaching experience

Summer 2019 & Summer 2021	**Instructor, 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	**Instructor, 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

Technical skill

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)