Chia-Hsuan Chang

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

Research interest

Natural Language Processing, Health Informatics, Generative Artificial intelligence, Data Science, AI Bias and 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 – Feb. 2021	**Visiting Ph.D. Student**
	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   Examining Public Awareness of Ageist Terms on Twitter: Content Analysis
Schramm, E., Yang, C. C., **Chang. C. H.**, Mulhorn, K., Yoshinaga S., Huh-Yoo, J.
JMIR Aging (indexing: ESCI)

2023   Resampling for Mitigating Bias in Predictive Model for Substance Use Disorder Treatment Completion
Lucas, M.M., **Chang, C. H.**, Yang, C. C.
IEEE International Conference on Healthcare Informatics – Houston, USA

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)

2020	Employing Word Mover's Distance for Cross-lingual Plagiarized Text Detection 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)
2023	**Reviewer**. Knowledge and Information Systems (KAIS)
2023	**Reviewer**. Journal of Healthcare Informatics Research (JHIR)
2023	**Reviewer**. International Journal of Data Science and Analytics (JDSA)

Award and honor

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 Transformers, PyTorch, Keras, Tensorflow, MySQL, MongoDB, Linux, Docker

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

Languages
Chinese (native), English (fluent)