Fanjie Li

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EDUCATION

Master's Degree, *University of Hong Kong, Hong Kong S.A.R.* Sep. 2018 - Feb. 2020

- M.Sc., Library and Information Management (Distinction)
- Specialist Strand: Data Science (GPA: 4.17/4.30)

Bachelor's Degrees, *Sichuan University, Chengdu, China* Sep. 2014 - Jul. 2018

- B.Mgt., Information Resource Management (GPA: 3.79/4)
- B.Eng., Software Engineering (GPA: 3.73/4)

RESEARCH INTERESTS

Learning analytics, Educational data mining, Human computer interaction, Human-centred design, Affective computing, Learning sciences

APPOINTMENTS & SERVICES

Research Assistant, *University of Hong Kong, Hong Kong S.A.R.* Mar. 2020 - Present

- CCMIR Lab (Director: Dr. Xiao Hu), Faculty of Education

Conference Reviewer

- The 22nd International Society for Music Information Retrieval Conference *(ISMIR '21)* Jun. 2020
- The 21st International Society for Music Information Retrieval Conference *(ISMIR '20)* Jun. 2020

Summer Research Internships

- CCMIR Lab (Director: Dr. Xiao Hu), *University of Hong Kong, HK* Jul. - Aug., 2017/2018
- Social Sensing Lab (Director: Dr. Dong Wang), *University of Notre Dame, USA* Jul. - Aug., 2016

PUBLICATIONS

Conference Papers

1. **Li, F.**, Wang, Z., Ng, T.D.J., & Hu, X. (2021). Studying with Learners' Own Music: Preliminary Findings on Concentration and Task Load. In *Proceedings of the 11th International Conference on Learning Analytics & Knowledge (LAK '21)* (pp. 613-619).
2. **Li, F.**, Xiao, Z., Ng, T.D.J., & Hu, X. (2021). Exploring Interdisciplinary Data Science Education for Undergraduates: Preliminary Results. In *Diversity, Divergence, Dialogue: iConference 2021.* Lecture Notes in Computer Science, vol 12645 (pp. 551-561).
3. **Li, F.**, Hu, X., & Que, Y. (2020). Learning with Background Music: A Field Experiment. In *Proceedings of the 10th International Conference on Learning Analytics & Knowledge (LAK '20)* (pp. 224-229).
4. Hu, X., **Li, F.**, & Kong, R. (2019). Can Background Music Facilitate Learning? Preliminary Results on Reading Comprehension. In *Proceedings of the 9th International Conference on Learning Analytics & Knowledge (LAK '19)* (pp. 101-105).
5. Hu, X., **Li, F.**, & Ng, T.D.J. (2018). On the Relationships between Music-induced Emotion and Physiological Signals. In *Proceedings of the 19th International Society for Music Information Retrieval Conference (ISMIR '18)* (pp. 362-369).

Journal Articles

6. **Li, F.** & Li, G. (2017). Deep Reading: Controversy and Reconsideration. *Journal of the National Library of China*, *26*(6), 16-25. doi: 10.13666/j.cnki.jnlc.2017.06.002.

Conference Posters/Abstracts

7. **Li, F.** & Hu, X. (2019). A Field Experiment on Music Preference during Learning. Presented at *Centre for Information Technology in Education Research Symposium 2019 (CITERS '19)*, Hong Kong.
8. **Li, F.**, Ng, T. D. J., & Hu, X. (2017). Emotion-Aware Music Information Retrieval Based on Physiological Signals and User Profile. Presented at *ISMIR '17* (Late-Breaking/Demo).

RESEARCH EXPERIENCE

Master's Thesis | A Field Experiment on Music Preference during Learning Feb. 2019 - Dec. 2019

Supervisor: *Dr. Xiao Hu*

- This study aims to a) profile the music preference of learners in view of potential individual differences, and b) investigate the association between music characteristics and listeners' learning experience.
  1) Designed and developed the Moody music app (iOS client with a Flask-based backend and the MySQL database) to facilitate longitudinal data collection in naturalistic settings.
  2) Performed acoustic analysis on the 10k music pool and estimated music emotion in the arousal-valence space via Support Vector Machines (SVM).
  3) Collected users' motion data, heart rate, etc. using Fitbit Versa smartwatch.
  4) Implemented the Multitasking test using PsychoPy based on specifications in literature, and refined an existing Python-based N-Back Test for assessing participants' working memory capacity.
  5) Conceived the conceptual framework. Performed data cleansing and analysis using Python and R.

Leveraging Background Music for Learning: An Interdisciplinary Approach Jul. 2018 - Present

PI: *Dr. Xiao Hu*

- Contributed to a laboratory experiment in this project. The experiment aims to probe the effects of five different types of background audio on reading comprehension.
  1) Experiment facilitator: performed the experiment to collect:
     a) a series of cognitive, metacognitive, and affective variables using self-reported measures,
     b) a set of peripheral physiological signals recorded by Empatica E4 wristband, and
     c) participants' eye movement recorded by the Tobii eye tracker.
  2) Data analysis: Physiological signal processing and statistical hypothesis testing.

Music Recommender Systems Based on Physiological Signals Jul. 2017 - Present

PI: *Dr. Xiao Hu*

- This project aims to enhance the emotion-aware music recommendation via physiological sensing.
  1) Designed and performed a user experiment to build a dataset with synchronized physiological signals (BVP, HR, IBI, EDA, TEMP) and user-labelled music-induced emotion.
  2) Data analysis: Physiological signal processing, music signal processing, built the music emotion recognition (MER) model using machine learning methods.
- Completed the undergraduate thesis "Towards emotion-aware music information retrieval: Detecting emotional responses to music based on physiological sensing" under the supervision of Prof. Yuan Zhao, Prof. Tao Lin, and Dr. Xiao Hu.

Deep Reading: Theoretical Conceptualization and Implications for Practices Jul. 2016 - Jun. 2018

PI: *Prof. Guihua Li*

- This is a subproject of a NSSFC study which focuses on youth reading behaviour in the Omni-media Era.

1) Discussed (i) varying perspectives on the conceptualization of *deep reading* based on a systematic literature review and K-Means clustering of expert survey responses and (ii) the mechanisms underlying *deep reading* in terms of (a) the cognitive-affective process inside the reading brain and (b) reading as a social process.
2) Participated in the coding process of a grounded theory study regarding *reading engagement*.
3) Participated in the design and implementation of a reading planner app: EverRead (supported by the National College Students' Innovation and Entrepreneurship Training Program).

TEACHING DEVELOPMENT

Developing and Evaluating Interdisciplinarity and Internationalization in the Curriculum of Bachelor of Arts and Sciences in Social Data Science Aug. 2020 - Present

PI: *Dr. Xiao Hu*

- This teaching development project aims to enhance the interdisciplinary and internationalized learning experience in the B.A.Sc. Social Data Science program.
  1) Developed the curriculum assessment framework and associated instruments;
  2) Developed repositories of interdisciplinary cases, topics and datasets in social data science;
  3) A document analysis of the curriculum design of existing social data science programs using qualitative content analysis and network analytical approaches;
  4) Designed protocols for assessing the interdisciplinarity of students' capstone projects using learning analytics methods (e.g., Epistemic Network Analysis).

HONOURS & AWARDS

A. SCHOLARSHIP

- LAK Conference Scholarship, Society for Learning Analytics Research (SoLAR) (2021)
- Women in MIR (WiMIR) Grants, ISMIR Conference (2017)
- Wang-Wen-Guo Scholarship, Sichuan University (2017)
- SCU First Prize Scholarship, Sichuan University (2016)
- National Scholarship, Ministry of Education of the People's Republic of China (2015)

B. OTHERS - SELECTED

- Dean's Honours List, University of Hong Kong (2020)
- Graduation with Distinction, University of Hong Kong (2020)
- Outstanding Undergraduate Thesis Award, Sichuan University (2018)
- Outstanding Graduates Award, Sichuan University (2017)
- Outstanding Students Award, Sichuan University (2015, 2016, 2017)
- Honorary admission, Wu Yuzhang Honors College at Sichuan University (Top 1.5%) (2015)

SKILLS

A. PROGRAMMING & SOFTWARE

- Python & Data science packages (e.g., Pandas, NumPy, Scikit-Learn, PM4Py, NetworkX), R
- Jupyter Notebook, RapidMiner, RapidProM, Gephi, Statistical software (e.g., Jamovi, SPSS)
- Music processing, Physiological signal processing, Visualization tools (Plotly, Seaborn, ggplot2)
- iOS App development (Swift), Web development (HTML, CSS, JavaScript, Flask), Java, C, SQL

B. OTHERS

- UI/UX design (Axure, Affinity Creative Suite), Photography, Musical instruments (Guzheng, Ukulele)