

Songyan Teng

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Education

- PhD in Human-Computer Interaction** Sep 2022 – Sep 2025
The University of Melbourne, Australia
- **Thesis:** Enhancing Smartphone Sensing Through Screen Text
 - **Supervisors:** Prof. Vassilis Kostakos, Dr. Simon D'Alfonso
 - **Skills:** Mobile Sensing, Natural Language Processing, Large Language Models, Data Analysis, User Studies, Software Development
- Bachelor of Science (Honours) in Computer Science** Jan 2019 – Jun 2022
The University of Auckland, New Zealand
- **Dissertation:** Evaluating the Effectiveness of Responsive Visualisation within a Breathing Application
 - **Supervisor:** A/Prof. Danielle Lottridge
 - **Grade:** First Class Honours

Research and Development Software Projects

- AWARE: Mobile Sensing Framework** Sep 2022 – Present
Software Developer - The University of Melbourne, Australia
- Open-source Android framework for privacy-preserving behavioural and contextual data collection
 - Designed and implemented the screen text sensor for secure, context-aware text capture
 - Supporting thousands of researchers worldwide in scalable mobile sensing through international collaboration
 - **Technologies:** Java, Kotlin, Android Studio
- MoodDJ: Emotion-Regulated Music Playlists** Sep 2024 – Jun 2025
Research Assistant - The University of Melbourne, Australia
- Spotify-based web application that generates playlists tailored to user moods
 - Investigated how affective transitions could be influenced through music recommendations
 - Developed a responsive user interface and integrated the Spotify API
 - **Technologies:** Python, Node.js, SQL
- PAGE: Personalised Assessment Generative Engine** Feb 2021 – Dec 2024
Research Assistant - The University of Auckland, New Zealand
- Web-based tool for automatically creating versioned assessments
 - Integrated synthetic data generation methods to diversify assessment datasets
 - Deployed to over 1,000 students across multiple classes and semesters
 - **Technologies:** Node.js, SQL

Experience

- Advanced Technology Group Intern**, Dolby, Australia May 2025 – Present
- Generating personalised multimodal experiences using smartphone sensor data
 - Developing and deploying multimodal large language models (MLLMs) for adaptive multimedia generation
 - Exploring how to effectively transform textual data into corresponding video, audio, and light outputs
- Research Assistant**, *Smartphone Sensing and Wellbeing*, The University of Melbourne, Australia Apr 2024 - Jul 2024
- Investigated how smartphone usage can serve as a predictor of health and wellbeing

- Implemented AI and machine learning techniques to analyse data correlations and identify patterns
- Software Engineer Intern**, Serato, New Zealand Nov 2021 – Feb 2022
- Created web applications to support product delivery and manage transactions
 - Implemented a web-based music visualiser application
- Software Developer**, SYQEL, United States Jan 2021 - May 2021
- Created responsive music visualisers according to audio input
 - Researched and implemented efficient methods for constructing visualisers
- Research Scholar**, *Cognitive Engagement and Debugging*, The University of Auckland, New Zealand Nov 2020 – Mar 2021
- Conducted user studies to collect data for analysing program debugging behaviour
 - Created data analysis tools to deduce patterns and identify behaviours beneficial to the debugging process
 - Communicated research results via oral presentations and written reports

Publications

- Songyan Teng**, D'Alfonso, S., & Kostakos, V. (2024). Understanding User Behavior in the Wild Using Smartphones. *Handbook of Human Computer Interaction*, 1–26. https://doi.org/10.1007/978-3-319-27648-9_109-1
- Chan, J., & **Songyan Teng**. (2024). The Design and Implementation of PAGE: Personalised Assessment Generative Engine. *Pacific Journal of Technology Enhanced Learning*, 6(2), 33–46. <https://doi.org/10.24135/pjtel.v6i2.203>
- Songyan Teng**, Zhang, T., D'Alfonso, S., & Kostakos, V. (2024). Predicting Affective States from Screen Text Sentiment. *Companion of the 2024 ACM International Joint Conference on Pervasive and Ubiquitous Computing*. <https://doi.org/10.1145/3675094.3678489>
- Zhang, T., **Songyan Teng**, Jia, H., & D'Alfonso, S. (2024). Leveraging LLMs to Predict Affective States via Smartphone Sensor Features. *Companion of the 2024 ACM International Joint Conference on Pervasive and Ubiquitous Computing*. <https://doi.org/10.1145/3675094.3678420>
- Songyan Teng**, D'Alfonso, S., & Kostakos, V. (2024). A Tool for Capturing Smartphone Screen Text. *Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems*. <https://doi.org/10.1145/3613904.3642347>

Leadership

- Web Chair**, ACM UbiComp Conference, Melbourne, Australia 2024
- Creating, maintaining, and updating the website to present information about the conference
 - Meeting with the committee to plan conference events and scheduling
- Web Chair**, ACM MobileHCI Conference, Melbourne, Australia 2024
- Creating, maintaining, and updating the website to present information about the conference
 - Meeting with the committee to plan conference events and scheduling
- Seminar Coordinator**, Human-Computer Interaction Group, The University of Melbourne, Australia 2023 – 2024
- Organising weekly HCI-themed seminars
 - Communicating about seminar requirements with internal and external speakers
 - Providing technical assistance and facilitating seminar sessions
- Communications Officer**, Computing and Information Systems Graduate Research Student Group, The University of Melbourne, Australia 2023 – 2024
- Welcoming new graduate research students to the faculty
 - Meeting with the committee to plan student events and scheduling
 - Sending announcements about student events

Website and Registration Coordinator, Computing and Information Systems 2023
Doctoral Colloquium, The University of Melbourne, Australia

- Created, maintained, and updated the website to present information about the colloquium
- Promoted the colloquium via social channels

Teaching

The University of Melbourne:

- INFO20005: User Interface Development 2025
- COMP90059: Introduction to Programming 2024 - 2025
- INFO10003: Fundamentals of Interaction Design 2023 - 2025
- COMP10003: Media Computation 2023 - 2025
- COMP90018: Mobile Computing Systems Programming 2023 - 2024

The University of Oulu:

- UBISS Workshop A: From Pixels to Psychology: Decoding Behaviour Through Smartphone Sensing 2025

The University of Auckland:

- BUSAN 201: Data Management 2022 - 2023
- BUSAN 300: Data Wrangling 2021 - 2022
- INFOMGMT 192: Information Tools for Business 2021 - 2022
- INFOSYS 222: Database Systems 2021

Technologies

Languages and Frameworks: Python, Java, C#, HTML, CSS, JavaScript, PHP, React, Vue.js, Node.js, Three.js

Artificial Intelligence: Large Language Models, Natural Language Processing, Multimodal Generation

Databases: SQL, MongoDB, Database Design