

論文審査の要旨および担当者

報告番号	甲 第 号	氏 名	Dingding Zheng
論文審査担当者：	主査	慶應義塾大学教授 MBA（経営学修士）岸 博幸	
	副査	慶應義塾大学教授 博士（政策・メディア）稲蔭正彦	
	副査	Goldsmiths University of London (Lecturer, Dr. sc. ETH) Jamie Ward	
	副査	Nanjing University of Finance and Economics (Lecturer, PhD. Psychology) Yingjie Wang	

(論文審査の要旨)

Thesis Title: An Interdisciplinary Psychometric Method for Psychophysiological Tracking of Social Interactions and Social Dynamics in "Real-World" Environments

This thesis proposes a novel approach of exploring social interactions and group dynamics in daily life scenarios through psychophysiological tracking and its combination with traditional psychological and sociological research methods.

Thesis Structure

The thesis is a written in the science and engineering category consisting of seven chapters. Chapter 1 sets the scene with a brief motivation, the research questions tackled in the thesis, an outline and the contributions. Chapter 2 gives an overview over related work and prior art going into the fields of social interactions in psychology, psychometrics, wearable sensing and studies related to those. Chapter 3 focuses on the methodology and approach of the thesis, developing the concept of using unobtrusive wearable sensing as a quantitative approach for exploring problems in inter-personal psychology. Chapter 4 describes the platform requirements and development motivated by the approach. Chapter 5 presents the five field studies and the datasets recorded and contributed by Dingding Zheng. Chapter 6 evaluates the datasets and shows interpretations of the recorded data in the light of inter-personal, social interactions. Chapter 7 concludes the thesis, giving some outlook and lessons learned.

Contributions Impact and Significance

The work has 3 major contributions (1) evaluation of wearable sensing to track social interactions in realistic field studies and a comparison to traditional psychometrics, questionnaires etc. (2) development of a platform based on this approach. (3) 5 large scale datasets (in total 52 participants, 5 social events, 143.4 hours, 1.1 GB of physiological data) with initial analysis available to interested researchers. The work constitutes an excellent Ph.D. thesis.

Dingding Zheng’s academic writing and research work are solid (using sound experimental methodology design, standard measures for evaluations, and detailed result analysis with the correct statistical tests and comprehensive discussion). Overall, we find all the content chapters well motivated.

She contributed significantly not only to the wearable computing field but also to the human computer interaction and psychology fields. Also, in our opinion, her work has the potential for a broader social impact.

The thesis is well-published and supported by papers accepted (11 in total)/under review in international conferences and journals. This is also seen in Dingding Zheng’s h-index: 4 with 31 citations (according to Google Scholar). Additionally, the research work presented is embedded in and contributed to several third-party research projects. Being able to work on this high international level speaks for the quality of the thesis and timeliness of the topic.

The topic itself is timely, relevant, and important for Human-Computer Interaction, Psychology, Social Dynamics and related research fields. The work has also broader social implications and impact.

Summary and Results

The review committee concluded that the contributions of the dissertation in relation to social impact, research output and quality meet the regulations and requirements for a PhD in Media Design.

Assessment Process:

1. The doctoral dissertation proposal defense was held online on Tuesday October 12th, 2021 17:00-18:00 JST. The dissertation advisory committee examined and judged the result based on the proposal and the oral examination.

The result was approved by the KMD graduate school committee on Thursday October 28, 2021.

The principal advisor: Kai KUNZE

The member of the advisory committee: Hiro KISHI, Masa INAKAGE

2. The public doctoral dissertation defense was held online on Thursday, January 06, 2022 17:00-19:00 JST. After the defense, the final assessment by the doctoral dissertation review committee and the dissertation advisory committee conducted in a breakout room online and concluded the decision to approve.

The followings are the participants of the public doctoral dissertation defense :

4 members of the doctoral dissertation review committee-

the principal advisor

5 other participants