Thitaree (Mint) Tanprasert

Personal Information

Date of Birth:	October 24, 1996	Phone:	+1 778 814 0463
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Education

Current Doctoral of Philosophy
Computer Science
University of British Columbia, Vancouver, British Columbia

May 2019 Bachelor of Science
Joint Major in Computer Science and Mathematics
Harvey Mudd College, Claremont, California
GPA: 3.82/4.00 (Major GPA: 3.80/4.00)

Publications

Thitaree Tanprasert, Sidney Fels, Luanne Sinnamon, Dongwook Yoon. (2024) Debate Chatbots to Facilitate Critical Thinking on YouTube: Social Identity and Conversational Style Make A Difference. *ACM CHI Conference on Human Factors in Computing Systems, CHI 2024*. Link to paper

Thitaree Tanprasert, Sidney Fels, Luanne Sinnamon, Dongwook Yoon. (2023) Scripted Vicarious Dialogues: Educational Video Augmentation Method for Increasing Isolated Students' Engagement. *ACM CHI Conference on Human Factors in Computing Systems, CHI 2023*. Link to paper

Thitaree Tanprasert, Dongwook Yoon. (2022) AR Music Visualizers: Application Space and Design Guidelines. *ACM CHI Conference on Human Factors in Computing Systems, CHI 2022*. Link to extended abstract

Thitaree Tanprasert, Sidney Fels, Luanne Sinnamon, Dongwook Yoon. (2022) Authoring Virtual Peer Interactions for Lecture Videos. *ACM CHI Conference on Human Factors in Computing Systems, CHI 2022*. Link to extended abstract

TJ Tsai, Daniel Yang, Mengyi Shan, Thitaree Tanprasert, Teerapat Jenrungrot. (2020) Using cell phone pictures of sheet music to retrieve MIDI passages. *IEEE Transactions on Multimedia (Volume: 22, Issue: 12, Dec. 2020)*. Link to paper

Thitaree Tanprasert, Daniel Yang, Teerapat Jenrungrot, Mengyi Shan, TJ Tsai. (2019) MIDI Passage Retrieval Using Cellphone Pictures of Sheet Music. *The 20th Annual Conference of International Society for Music Information Retrieval, ISMIR 2019*. Link to paper, Talk video

Thitaree Tanprasert, Teerapat Jenrungrot, Meinard Mueller, TJ Tsai. (2019) MIDI-Sheet Music Alignment Using Bootleg Score Synthesis. *The 20th Annual Conference of International Society for Music Information Retrieval, ISMIR 2019*. Link to paper

Thitaree Tanprasert, Chalermpol Saiprasert, Suttipong Thajchayapong. (2017). Combining Unsupervised Anomaly Detection and Neural Networks for Driver Identification. *Journal of Advanced Transportation, Vol. 2017*. Link to paper

Ongoing Research Projects

Current - May 2023

Piano-based Video-based Music Learning Interface

University of British Columbia

We aim to design a piano-based interface for controlling music educational videos to minimize learner's needs to move their hands away from the instrument and improve learning efficiency. I conducted designed and conducted the focus group interview formative study and the design concept evaluation. This project is in collaboration with Frank Heyen, supervised by Professor Dongwook Yoon and Professor Michael Sedlmair (University of Stuttgart).

Current - September 2023

LLM-based Adaptive Social Learning Virtual Environment

University of British Columbia

This project proposes a social learning environment with multiple LLM-based peer characters to collaborate with students on essay writing tasks. The virtual peers adapt their behaviors to induce the student's educational engagement and prevent free-riding behavior. I conducted literature review and designed the system pipeline. I will also be implementing the system and running an evaluative study. This project is in collaboration with Dr. Young-ho Kim (Naver AI), Professor Sid Fels (UBC, Electrical Engineering) and Professor Luanne Sinnamon (UBC, iSchool), and is supervised by Professor Dongwook Yoon.

Current - January 2024

Understanding how Non-Native English Speakers Prompt Large Language Models

University of British Columbia

This project aims to understand how non-native English speakers prompt LLM differently from native speakers. The main researcher of this project is Lucy Luo, an undergraduate student. I mentor Lucy Luo, participate in study design, and provide resources. This project is in collaboration with Dr. Hwajung Hong (KAIST), and is supervised by Professor Dongwook Yoon.

Current - January 2024

Implementing LLM-Based Tutoring Chatbots in University Settings

University of British Columbia

This project aims to evaluate the ability of LLMs in answering students' queries on Piazza in comparison to human educators. The main researcher of this project is Dilreet Raju, an undergraduate student. I mentor Dilreet Raju, participate in study design, and provide resources. This project is in collaboration with Prof. Jian Zhu (UBC, Linguistics) and Prof. Vered Shwartz (UBC, Computer Science), and is supervised by Professor Dongwook Yoon.

Past Research Projects

September 2022 - January 2020

Qualitative Studies of Video-based Music Learning

University of British Columbia

This project aims to study how people learn to play musical instruments from free videos, create a set of guidelines for making good tutorial videos, and identify the learner's challenges as well as present their implications of design. I conducted an online interview and diary study with 20 participants, performed qualitative data analysis, and implemented Proof-of-concept interfaces for design implications. supervised by Professor Dongwook Yoon. (Journal paper is in preparation.)

May 2019 - September 2018

Creating Spatialized Audio for Mixed-Reality Application

Intel Corporation

This project is a part of a year-long, capstone, team project at Harvey Mudd College, which aims to develop an audio system for Mixed-Reality (MR) iOS application. The system would capture the acoustics of the user's environment and playback audio in the MR scene as though they were in the same environment as the users. I worked on developing an algorithm for acoustics modeling and incorporating the system with Google Resonance Audio and ARkit. As the project manager of a six-person team, my responsibilities also include scheduling meetings, arranging site visits, doing paperwork, and communicating between the team, advisor, and sponsor liaisons. This project is supervised by Professor Alfonso Castro in collaboration with liaisons from Intel Sports.

Past Research Projects (cont.)

May 2018 - February 2017

Live-Song Identification Project
Music Information Retrieval Lab, Department of Engineering, Harvey Mudd College

This project aims to retrieve song name based on a six-second query of live performance. I experimented with various architectures of neural nets (e.g. MLP, CNN, RNN) in Tensorflow and ran simulations with GPU on XSEDE supercomputer. I also performed literature search and implemented several hashing methods in Matlab and Python. This project is supervised by Professor Timothy Tsai.

July 2018 - May 2018

The Circuit Complexity of Recognizing Closed Sets and Performing Closure Operations
Department of Mathematics, Harvey Mudd College

This project aims to solve for lower bound of circuit complexity of recognizing closed sets and performing closure operations by combining the principle of local coding with enumeration of Boolean functions with entropy. Supervised by Professor Nicholas Pippenger.

December 2018 - September 2018

Problem Decomposition in Computer Programming and Spatial Reasoning
CS106: Computer Education Research, Harvey Mudd College

This project aims to understand the correlation of spatial reasoning and computer programming ability in introductory level CS through qualitative method. I designed and conducted interviews with CS students in my college and wrote a conference paper as a co-author. This research project is accepted through ACM Student Research Competition and will be presented at Special Interest Group on Computer Science Education (SIGCSE) Technical Symposium 2019.[Link to poster abstract: `ttanprasert.github.io/CSed_PosterAbstract.pdf`. Link to full paper submission can be found in Publications section.] This project is supervised by Professor Colleen Lewis.

Work Experience

Current - January 2020

Research Assistant
University of British Columbia, Canada

Worked on Piano-based Video-based Music Learning Interface project, Video-based Music Learning Project, Scripted Interactions for Lecture Videos Project, and AR Music Visualizer Project, supervised by Professor Dongwook Yoon.

December 2023 - September 2023

Instructor
University of British Columbia, Canada

Organized course contents, delivered lectures, facilitated in-class activities, and supervised workshop teaching assistants for course CPSC 344: Introduction to Human-Computer Interaction Methods (Fall 2023) (Class size: 103, Unit: 3).

April 2023 - September 2019

Teaching Assistant
University of British Columbia, Canada

Tutored students and graded students' homework, projects, and exams for course CPSC312: Functional and Logic Programming (Fall 2019) and CPSC444: Advanced Methods for Human-Computer Interaction (Spring 2021-2023).

May 2019 - January 2017

Research Assistant
Music Information Retrieval Lab, Department of Engineering, Harvey Mudd College

Worked as a research lab member during the academic years (2016-2017, 2017-2018, 2018-2019) and for 10-week, full-time summer research internships in 2017 and 2018. I worked on the Live-Song Identification project and The MIDI-Sheet Music Alignment Using Bootleg Score Synthesis project. (Details about the projects can be found in the Research Projects section.) Additionally, I annotated audio and image data to create datasets for other projects in the lab. All work is supervised by Professor Timothy Tsai.

Work Experience (cont.)

May 2019 - August 2016 — Grader and Tutor
Harvey Mudd College
Tutored students and graded students' homework for the following Math, CS, and Physics classes: MATH030: Calculus, MATH040: Introduction to Linear Algebra, MATH045: Introduction to Differential Equations, MATH055: Discrete Mathematics, CSCI005: Introduction to Computer Science, CSCI042: Principles and Practice: Computer Science, CSCI060: Principles of Computer Science, CSCI081: Computability and Logic, CSCI131: Principles of Programming Language, PHYS023: Special Relativity, PHYS024: Mechanics and Wave Motion.

July 2016 - June 2016 — Summer Research Assistant
National Electronic and Computer Technology Center (NECTEC), Thailand
Worked on the project Combining Unsupervised Anomaly Detection and Neural Networks for Driver Identification. (Details of the project can be found in the Research Project section.)

August 2015 - June 2015 — Software Developer
Praram 9 Technology Co., Ltd.
Worked on Bizcard project to develop a smartphone application for electronic business card, where users can exchange cards through RFID communication. I developed and implemented the RFID communication via Arduino and the database for Bizcard users on the web server.

Skills

Programming:	Python, C/C++, C#, Matlab, Java, Racket, Haskell, Prolog, Typescript, HTML
System:	Using Unix system, MS Windows, run simulation with GPU on XSEDE.
Tools/Libraries:	RapidMiner, Tensorflow, Keras, Unity, Blender, Maya, Librosa, Mido, D3 (Angular), Figma
Music:	Playing piano, singing, composing and arranging, producing electronic music with Digital Performer 9 and Max 7.
Language:	Thai (Native), English (Fluent), Korean (Basic knowledge)

Scholarships and Certificates

May 2019 - September 2015 — Recipient of So International Scholarship, Harvey Mudd College
4 years (from the academic year 2015-2016 to the academic year 2018-2019.)
This is a scholarship for international students with superior academic performance.
The recipient is selected upon admission; one recipient for each entering class,
regardless of financial status ($ 50,000/academic year.)

January 2015 — Associate Trinity College London (ATCL) in Piano Recital (with Distinction)
Level 4 Diploma in Music Performance
Awarded by Trinity College London (ATCL)

July 2018 — GRE General Test®
Verbal Reasoning: 161/170 (88^{th} percentile);
Quantitative Reasoning: 170/170 (96^{th} percentile);
Analytical Writing: 4.5/6.0 (82^{th} percentile)

October 2018 — TOEFL®: Reading: 30/30; Listening: 29/30: Speaking: 26/30; Writing: 30/30;
Total: 115/120