Thitaree (Mint) Tanprasert

Personal Information

Phone:	+1 778 814 0463
email:	tt1996@cs.ubc.ca
Website:	ttanprasert.github.io
Address:	2366 Main Mall • Vancouver, BC V6T 1Z4 • Canada

Education

Current	Doctoral of Philosophy (expected graduation: May 2025) 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

Papers

1. 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
2. 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
3. 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
4. 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
5. 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
6. 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

Posters

1. 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

2. 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

3. Ka Ki Fung, Thitaree Tanprasert. (2019) Problem Decomposition in Introductory Computer Science and Spatial Reasoning. *Proceedings of the 50th ACM Technical Symposium on Computer Science Education, SIGCSE 2019*. Link to poster abstract, Link to extended abstract

Ongoing Research Projects

May 2023 - Current

Piano-based Video-based Music Learning Interface

University of British Columbia, Canada

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 designed and conducted the focus group interview formative study and the design concept evaluation. This project is in collaboration with Frank Heyen, supervised by Dr. Dongwook Yoon (UBC) and Prof. Michael Sedlmair (University of Stuttgart).

September 2023 - Current

LLM-based Collaborative Peer Agents for Isolated Learners

University of British Columbia, Canada

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), Prof. Sid Fels (UBC, Electrical Engineering) and Dr. Luanne Sinnamon (UBC, iSchool), and is supervised by Dr. Dongwook Yoon.

January 2024 - Current

Understanding ChatGPT Roles and Prompting Patterns in Daily Life

University of British Columbia, Canada

This project aims to understand how users prompt LLM chatbots, exploring various user-assumed AI roles, dialogue structure, success-effort levels, gender, and AI literacy. The main researcher of this project is Lucy Luo, an undergraduate student. I serve as a mentor for Lucy Luo, participate in study design, and provide resources. This project is in collaboration with Dr. Hwajung Hong (KAIST), and is supervised by Dr. Dongwook Yoon.

January 2024 - Current

Implementing LLM-Based Tutoring Chatbots in University Settings

University of British Columbia, Canada

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

July 2024 - Current

Designing LLM Chatbots for Learning Analytics-based Metacognitive Guidance

University of British Columbia, Canada

This project aims to utilize learning analytics data and metacognitive regulation theories to develop LLM-based chatbots that can provide guidance for self-regulated students with various levels of metacognitive skills. I designed the prompting pipeline and the user study protocol for the chatbots. This project is supervised by Dr. Fatemeh Salehian Kia (UBC, iSchool).

Past Research Projects

January 2020 - September 2022

Qualitative Studies of Video-based Music Learning
University of British Columbia, Canada

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 Dr. Dongwook Yoon. (Journal paper is in preparation.)

September 2018 - May 2019

Creating Spatialized Audio for Mixed-Reality Application
Intel Corporation, USA

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.

February 2017 - May 2018 -

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

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 Dr. Timothy Tsai.

May 2018 - July 2018

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

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.

September 2018 - December 2018

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

This project aims to understand the correlation of spatial reasoning and computer programming ability in introductory level CS through qualitative methods. I designed and conducted interviews with CS students in my college and wrote a conference paper as a co-author. This research project was accepted through ACM Student Research Competition and was presented at Special Interest Group on Computer Science Education (SIGCSE) Technical Symposium 2019 (links to submission are under the Posters section). This project is supervised by Dr. Colleen Lewis.

August 2013 - May 2014

A Heart-Rate-Controlled Animated Exercise Trainer using Neural-Network-Based Adaptive Control
Presented at 2014 Intel ISEF (Computer Science category)

This project aims to create an exercise trainer that adjusts exercise movements and intensity level based on user's real-time heart rate. I designed and implemented the main feedback control system, which consists of a feed-forward neural network, self-organizing feature maps, and a decision-making algorithm, all in Python. I also designed and created exercise animation using Blender, Panda 3D Module for controlling 3D animation and PyBluez for Bluetooth communication between Python program and Bluetooth heart rate detector. This project won second prize at Young Scientist Competition 2013 in Thailand and the Excellence in Computer Science award at Intel ISEF 2014.

Work Experience

January 2020 - Current
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, AR Music Visualizer Project, Debate Chatbots for Critical Thinking Project, LLM-based Collaborative Peer Agents Project, ChatGPT Roles and Prompting Pattern Project, and LLM-based Tutoring Chatbots Project, supervised by Dr. Dongwook Yoon.

September 2023 - December 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).

September 2019 - April 2023
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).

January 2017 - May 2019
Research Assistant
Music Information Retrieval Lab, Department of Engineering, Harvey Mudd College, USA
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 Dr. Timothy Tsai.

August 2016 - May 2019
Grader and Tutor
Harvey Mudd College, USA
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.

June 2016 - July 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. (Link to the full paper can be found in the Publications section.) The project was supervised by Dr. Chalermpol Saiprasert and Dr. Suttipong Thajchayapong.

June 2015 - August 2015
Software Developer
Praram 9 Technology Co., Ltd., Thailand
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.

Academic Service Activities

September 2020 - Current | Conference Paper Reviewers

Reviewed papers and posters for the following academic conferences: CHI 2021, CHI 2022, DIS 2023, CHI 2024, DIS 2024, and CHI 2025.

May 2024 | CTLT Learning Week Workshop

Centre for Teaching, Learning and Technology (CTLT), University of British Columbia, Canada

Organized and facilitated a workshop titled *Lecture to Dialogues - Make Your Lesson Materials More Engaging with ChatGPT*. The workshop is a part of Celebrate Learning Week, a cross-campus, week-long initiative organized by the University of British Columbia's CTLT, under the theme "Remembering Human in the Loop". The workshop was attended by 41 instructors, staff members, and interested public attendees. Link to workshop slides

March 2022 - December 2023 | MUX Meeting Czar

University of British Columbia, Canada

MUX (Multimodal User eXperience) is a research cluster that brings together HCI researchers in the Department of Computer Science at UBC. As the MUX Meeting Czar, I proactively managed, scheduled, and coordinated various HCI labs for monthly research progress presentations. I led other MUX-level activities, such as paper abstract and full paper review sessions, discussion of lab issues, and introduction of new students. I also maintained the communication channels, resources, meeting space, and equipment.

Skills and Training

June 2024 | Instructional Skills Workshop (ISW)

University of British Columbia, Canada

ISW is a workshop for enhancing teaching effectiveness offered in British Columbia, Canada. I have completed the workshop, which consists of lectures on pedagogical theories, practical mini-lessons, and collaborative activities for developing and applying teaching approaches.

September 2019 - April 2024 | DFP Collaborative Research and Training Experience Program (DFP CREATE)

University of British Columbia, Canada

Designing for People (DFP) is an interdisciplinary research cluster of HCI researchers at the University of British Columbia. I completed the training program, DFP Collaborative Research and Training Experience Program (CREATE), which includes HCI-related coursework, a collaboration research project with LlamaZoo, DFP seminars, and professional skills workshops.

Other 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, R Studio, 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

September 2015 - May 2019	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