# WASITA MAHAPHANIT

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## RESEARCH INTERESTS

How can we effectively collaborate with others and enhance our understanding of the world, given our unique viewpoints and incomplete access to information? In other words, how do we adaptively interact with others and improve our mental models of the world in the face of uncertainty? What role does communication and other types of interaction play in this collaborative effort, and how are these processes computationally supported? To investigate these questions, I primarily use large-scale real-time online behavioral experiments, natural language processing (NLP), and computational modeling.

## EDUCATION

### Dartmouth College

Jan 2021 — Present
Hanover, NH

Ph.D. Candidate in Cognitive Neuroscience

Advisor: Luke J. Chang

Committee: Luke J. Chang, Jonathan S. Phillips, Thalia Wheatley, & Robert D. Hawkins

### Brown University

2014 — 2018
Providence, RI

B.S., Cognitive Neuroscience (Honors)

Co-advisors: Amitai Shenhav & Romy Frömer

## RESEARCH EXPERIENCE

### Doctoral Researcher

Jan 2021 — Present
Hanover, NH

Dartmouth College | Dept. of Psychological & Brain Sciences (PBS)

Computational Social Affective Neuroscience (COSAN) Lab

Co-advisors & Collaborators: Luke J. Chang & Robert D. Hawkins

Research focuses: shared experience, collaboration, communication, theory of mind, dyadic & group social interactions, NLP, Bayesian inference

### Lab Manager

Jun 2018 — Dec 2020
Providence, RI

Brown University | Dept. of Cognitive, Linguistics, & Psychology (CLPS)

Laboratory of Neural Computation + Cognition (LNCC)

Co-advisors & Collaborators: Michael J. Frank, Andra Geana, & Matt Nassar

Research focuses: computational psychiatry (esp. OCD), reinforcement learning, decision-making, EEG, pharmacology, Parkinson's Disease

### Undergraduate Research Assistant

Sept 2016 — Jun 2018
Providence, RI

Brown University | Dept. of Cognitive, Linguistics, & Psychology (CLPS)

Shenhav Lab

Co-advisors & Collaborators: Amitai Shenhav & Romy Frömer

Research focuses: cognitive control, performance monitoring, task-switching, EEG

### Summer Undergraduate Research Intern

May 2016 — Jun 2016
Providence, RI

Providence VA Medical Center

Psychiatric Neuromodulation Clinic

Advisor: Noah S. Phillips

Research focuses: major-depressive disorder, post-traumatic stress disorder, rTMS

## TEACHING EXPERIENCE

### Graduate Teaching Assistant

Spring 2023
Hanover, NH

Dartmouth College | Dept. of Psychological & Brain Sciences (PBS)

Cognitive Psychology

Professor: Viola Stoermer

### Graduate Teaching Assistant

Fall 2022
Hanover, NH

Dartmouth College | Dept. of Psychological & Brain Sciences (PBS)

Human Brain Mapping with fMRI

Professor: Luke J. Chang

### Graduate Teaching Assistant

Spring 2022
Hanover, NH

Dartmouth College | Dept. of Psychological & Brain Sciences (PBS)

Emotion

Professor: Mark Thornton

### Graduate Teaching Assistant

Fall 2021
Hanover, NH

Dartmouth College | Dept. of Psychological & Brain Sciences (PBS)

Human Brain Mapping with fMRI

Professor: Luke J. Chang

### Undergraduate Teaching Assistant

Spring 2018
Providence, RI

Brown University | Dept. of Computer Science

Intro to Scientific Computing and Problem Solving

Professor: Daniel Potter

### Undergraduate Teaching Assistant

Fall 2017
Providence, RI

Brown University | Dept. of Cognitive, Linguistics, & Psychology (CLPS)

Intro to Programming

Professor: Thomas Serre

## WORKING PAPERS

**Mahaphanit, W.***, Welker, C.*, Schmidt, H., Chang, L.J., & Hawkins, R.D. (In Prep). When & why do we infer commonalities in social interactions? .

**Mahaphanit, W.** & Chang, L.J. (In Prep). Are shared experiences blind? .

**Mahaphanit, W.** & Chang, L.J. (In Prep). Communication as behavioral annotation for naturalistic stimuli. .

Kang, J., **Mahaphanit, W.**, Provenza, N., Nassar, M., Allam, A., Bechtold, R., Diab, N., Rajesh, S., Reddy S., Reyes, G., Dastin-van Rijn, E., Gandhi, A., Hirani, S., Banks, G., Dang, H., Avendano-Ortega, M., McKay, S., Borton, D., Frank, M.J., Storch, E., Herron, J., Goodman, W., Hayden, B., & Sheth, S. (In Prep). The effect of adaptive deep brain stimulation for obsessive-compulsive disorder in cognitive self-control under uncertainty. .

## PREPRINTS

**Mahaphanit, W.***, Welker, C.*, Schmidt, H., Chang, L.J., & Hawkins, R.D. (2024). When & why does shared reality generalize? *PsyArXiv*. [PDF]

## PROCEEDINGS PAPERS

**Mahaphanit, W.***, Welker, C.*, Schmidt, H., Chang, L.J., & Hawkins, R.D. (2024). When & why does shared reality generalize? *Proceedings of the 46th Annual Conference of the Cognitive Science (CogSci) Society*. [PDF]

**Mahaphanit, W.**, Welker, C., Schmidt, H., Chang, L.J., & Hawkins, R.D. (2024). How does shared reality generalize? *Proceedings of the 7th Annual Conference on Cognitive Computational Neuroscience (CCN)*.

## JOURNAL PAPERS

Culbreth, A., Moran, E., **Mahaphanit, W.**, Erickson, M., Boudewyn, M., Frank, M.J., Barch, D., MacDonald III, A., Ragland, J., Luck, S., Silverstein, S., Carter, C., & Gold, J. (2023). A Transdiagnostic Study of Effort-Cost Decision-Making in Psychotic and Mood Disorders. *Schizophrenia Bulletin*.

Provenza, N.R., Gelin, L., **Mahaphanit, W.**, McGrath, M., Dastin-van Rijin, E., Fan, Y., Dhar, R., Frank, M.J., Restrepo, M.I., Goodman, W.K., and Borton, D. (2021). Honeycomb: a template forreproducible psychophysiological tasks for clinic, laboratory, and home use. *Brazillian Journal of Psychiatry*.

## TALKS

**Mahaphanit, W.** (November 2024). Inferring commonalities in social interactions. Crockett Lab Meeting (PI: Molly Crockett), Princeton University, Princeton, NJ.

**Mahaphanit, W.** (July 2024). When & why does shared reality generalize? Cognitive Science Society conference (CogSci 2024), Rotterdam, Netherlands.

**Mahaphanit, W.** (February 2024). Are shared experiences blind? Shared Reality Mini-Conference, Virtual.

**Mahaphanit, W.** (December 2023). Web dev approaches to studying social interactions. Social Interaction Lab Meeting (PI: Robert D. Hawkins), Virtual.

**Mahaphanit, W.** (November 2023). Learning to communicate a shared wavelength. New England Research on Decision-Making (NERD) conference, Harvard University, Cambridge, MA.

**Mahaphanit, W.** (October 2023). Learning to communicate a shared wavelength. Social Interaction Lab Meeting (PI: Robert D. Hawkins), Virtual.

**Mahaphanit, W.** (October 2023). Does shared reality generalize? Social Interaction Lab Meeting (PI: Robert D. Hawkins), Virtual.

**Mahaphanit, W.** (September 2023). Learning to collaboratively communicate a shared wavelength. Social Lab (SLAB) Talk Series, Dartmouth College, Hanover, NH.

**Mahaphanit, W.** (May 2023). Decision-Making. Guest lecture for PSYC 028 (Cognitive Psychology) class taught by Prof. Viola Störmer, Dartmouth College, Hanover, NH.

**Mahaphanit, W.** (September 2022). On using a chat app to study communication and shared reality. Social Lab (SLAB) Talk Series, Dartmouth College, Hanover, NH.

**Mahaphanit, W.** (May 2022). Evolutionary game theory. Guest lecture for PSYC 043 (Emotion) class taught by Prof. Mark Thornton, Dartmouth College, Hanover, NH.

**Mahaphanit, W.** (October 2021). On building a chat app for studying shared reality construction and communication. Social Lab (SLAB) Talk Series at Dartmouth College, Dartmouth College, Hanover, NH.

**Mahaphanit, W.** (December 2020). Computations in information-seeking and decision-making in Obsessive-Compulsive Disorder. Learning, Memory, & Decision Lab Meeting (PI: Matt Nassar), Brown University, Providence, RI.

**Mahaphanit, W.** (November 2020). Intro to Honeycomb: a template for reproducible psychophysiological task creation. Center for Computation & Visualization (CCV) tutorial series, Brown University, Providence, RI.

**Mahaphanit, W.** (June 2020). Computations in information-seeking and decision-making in Obsessive-Compulsive Disorder. Brown Uncomference on Computational Intelligence and Applications, Brown University, Providence, RI.

**Mahaphanit, W.** (May 2018). The costs of having better alternatives. Departmental undergraduate honors thesis oral defense presentation, Brown University, Providence, RI.

## POSTERS

**Mahaphanit, W.** & Chang, L.J. (September 2024). Shared experiences increase social connection. Presented at the OppNet Social Connectedness and Isolation (SCI) grantee meeting, NIH, Rockville, MD.

**Mahaphanit, W.**, Welker, C., Schmidt, H., Chang, L.J., & Hawkins, R.D. (August 2024). How does shared reality generalize? Presented at the 7th annual conference on Cognitive Computational Neuroscience (CCN), MIT, Cambridge, MA.

Kang, J., **Mahaphanit, W.**, Provenza, N., Nassar, M., Allam, A., Bechtold, R., Diab, N., Rajesh, S., Reddy S., Reyes, G., Dastin-van Rijn, E., Gandhi, A., Hirani, S., Banks, G., Dang, H., Avendano-Ortega, M., McKay, S., Borton, D., Frank, M.J., Storch, E., Herron, J., Goodman, W., Hayden, B., & Sheth, S. (June 2024). The effect of adaptive deep brain stimulation for obsessive-compulsive disorder in cognitive self-control under uncertainty. Presented at the American Society for Stereotactic & Functional Neurosurgery (ASSFN), Nashville, TN.

**Mahaphanit, W.**, Hawkins, R.D., Phillips, J.S., & Chang, L.J. (April 2024). Learning to communicate a shared wavelength facilitates social connection. Presented at the Social & Affective Neuroscience (SANS) Society, Toronto, CA.

**Mahaphanit, W.** & Chang, L.J. (February 2024). Shared experiences strengthen social connectedness through shared impression formation and communication behavior. Presented at the Society for Personality & Social Psychology (SPSP), San Diego, CA.

**Mahaphanit, W.** & Chang, L.J. (July 2023). Shared experiences strengthen social connectedness through shared impression formation and communication behavior. Presented at the Cognitive Science (CogSci) Society conference, Virtual.

**Mahaphanit, W.** & Chang, L.J. (April 2023). Are shared experiences blind? Presented at the Social & Affective Neuroscience (SANS) Society, Santa Barbara, CA.

Geana, A., **Mahaphanit, W.**, & Frank, M.J. (October 2019). The role of perceptual uncertainty in value learning and naturalistic stimulus categorization. Presented at the Society for Neuroscience (SfN), Chicago, IL.

**Mahaphanit, W.**, Geana, A., & Frank, M.J. (July 2019). Perceptual uncertainty influences stimulus value learning in perceptual categorization. Presented at the 4th Multidisplinary conference on Reinforcement Learning and Decision Making (RLDM), Montreal, CA.

Provenza, P., Dastin-van Rijn, E., McLaughlin, N., Sheth, S., Viswanathan, A., Vogt, G., Ramakrishnan, R., McIngvale, E., Storch, E., **Mahaphanit, W.**, Nassar, M., Frank, M.J., Ertugrul, I., Jeni, L., Cohn, J., Borton, D., & Goodman, W. (April 2019). Preliminary experience with developing adaptive Deep Brain Stimulation for Obsessive Compulsive Disorder. Presented at the 5th Annual BRAIN Initiative Investigators Meeting, Washington, D.C.

## AWARDS & HONORS

Neukom Travel Award | $1,000 — July 2025
Dartmouth College

Diversity & Inclusion Conference Award | $1,000 — July 2024
Cognitive Science Society

Neukom Travel Award | $1,000 — July 2024
Dartmouth College

Neukom Travel Award | $1,000 — April 2023
Dartmouth College

Honorable Mention — April 2022
NSF Graduate Research Fellowship (GRFP)

Inductee — May 2018
Sigma Xi

Deep Learning Datathon | 1st Place — January 2018
Brown University

National College Match Finalist — 2014
QuestBridge

College Prep Scholar — 2013
QuestBridge

## FELLOWSHIPS & SCHOLARSHIPS

Undergraduate Teaching & Research Award | $3,500 — Summer 2017
Brown University

Undergraduate Teaching & Research Award | $1,000 — Spring 2016
Brown University

Sorensen Family Chancellor's Scholarship — 2015 - 2017
Brown University

Junior Volunteer Endowment Scholarship | $2,000 — Spring 2014
Maine Medical Center

## SCIENTIFIC & COMMUNITY OUTREACH

PBS NOVA | Episode: Who's in Control? — May 2023
Software Engineer for Featured Trust Game & fMRI Operator

Svelte Radio | Episode: Svelte in Research at Dartmouth with Wasita & Eshin — April 2023
Podcast Guest

Women in Network Science (WiNS) Society — 2022 - Present
Site Maintainer | Website Working Group

Info Theory Book — 2022 - Present
Content Contributor & Site Maintainer

Intro to fMRI at Dartmouth — 2021 - 2023
Content Contributor & Site Maintainer

Project SHORT — 2020 - 2022
Pre-Grad Mentor

Honeycomb — 2019 - 2021
Contributing Software Engineer

Rhode Island Brain Week — 2018 - 2020
Booth Organizer

Rhode Island Brain Week — 2017 - 2018
Booth Volunteer

## RESEARCH TRAINING

Methods in Neuroscience at Dartmouth (MIND) Summer School — 2023
Dartmouth College

Computational Neuroscience — 2021
Neuromatcha Academy (NMA)

Carney Computational Modeling Workshop — 2018
Brown University

## PROFESSIONAL & DEPRTMENTAL SERVICE

Social Lab (SLAB) Talk Series Co-Organizer — 2021 - 2024
Dartmouth College | PBS

Consortium for Interacting Minds (CIM) Talk Series Co-Organizer — 2021 - 2024
Dartmouth College | PBS

Teaching Assistant Repository Creation & Organization Committee — 2022 - 2023
Dartmouth College | PBS

Meeting Harmonization Committee — 2021 - 2023
Dartmouth College | PBS

Transitioning from Intro to Programming to Career in Computation | Alumni Panelist — 2021
Brown University | CLPS

Managing Minds (Lab Manager Peer Mentoring Group) | Founder & Organizer 2019 - 2021
Brown University | CLPS & Carney Institute

Cognitive Neuroscience DUG Alumni Career Panelist 2018
Brown University | CLPS