

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

Ph.D. Candidate in Cognitive Neuroscience

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

2021 – Present

📍 Hanover, NH

Brown University

B.S., Cognitive Neuroscience (Honors)

Advisor: Amitai Shenhav

2014 – 2018

📍 Providence, RI

RESEARCH EXPERIENCE

Graduate Student Researcher

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

🌟 cosanlab.com

Co-Advisors: Luke J. Chang & Robert D. Hawkins

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

2021 – Present

📍 Hanover, NH

Lab Manager/Research Assistant

Brown University | Dept. of Cognitive, Linguistic, & Psychological Sciences (CLPS)

🌟 inccbrown.com

Advisor: Michael J. Frank

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

2018 – 2021

📍 Providence, RI

Undergraduate Research Assistant

Brown University | Dept. of Cognitive, Linguistic, & Psychological Sciences (CLPS)

🌟 shenhavlab.org

Advisor: Amitai Shenhav

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

2016 – 2018

📍 Providence, RI

Summer Undergraduate Research Intern

Providence VA Medical Center

🌟 vivo.brown.edu/display/nphilip

Advisor: Noah Philip

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

2016 – 2018

📍 Providence, RI

TEACHING EXPERIENCE

Graduate Teaching Assistant

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

Cognitive Psychology

Spring 2023

📍 Hanover, NH

Professor: Viola Störmer

Graduate Teaching Assistant

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

Principles of Human Brain Mapping with fMRI

Professor: Luke J. Chang

Fall 2022

📍 Hanover, NH

Graduate Teaching Assistant

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

Emotion

Professor: Mark Thornton

Spring 2022

📍 Hanover, NH

Graduate Teaching Assistant

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

Principles of Human Brain Mapping with fMRI

Professor: Luke J. Chang

Fall 2021

📍 Hanover, NH

Undergraduate Teaching Assistant

Brown University | Dept. of Computer Science

Intro to Scientific Computing and Problem Solving

Professor: Daniel Potter

Spring 2018

📍 Providence, RI

Undergraduate Teaching Assistant

Brown University | Dept. of Cognitive, Linguistic, & Psychological Sciences (CLPS)

Intro to Programming

Professor: Thomas Serre

Fall 2017

📍 Providence, RI

WORKING PAPERS

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

Mahaphanit, W. & Chang, L.J. (In prep.). Communication as behavioral annotations for experimental 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.

Mahaphanit, W., Geana, A., and Frank, M.J. (In prep.). Perceptual uncertainty disrupts credit assignment in stimulus value learning and perceptual categorization.

PREPRINTS

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

PROCEEDINGS PAPERS

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

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 Rijn, E., Fan, Y., Dhar, R., Frank, M.J., Restrepo, M.I., Goodman, W.K., and Borton, D. (2021). Honeycomb: a template for reproducible psychophysiological tasks for clinic, laboratory, and home use. *Brazilian Journal of Psychiatry*.

TALKS

Mahaphanit, W. (September 2024 - Forthcoming). When and why does shared reality generalize? Lab Meeting (PIs: Matthew Apps, Romy Frömer, Arkady Konovalov, Patricia Lockwood, & Lei Zhang), University of Birmingham, Birmingham, UK.

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

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

Mahaphanit, W. (December 2023). Web dev approaches to studying social interactions. Social Interaction Lab (PI: Robert Hawkins) meeting. University of Wisconsin-Madison, WI.

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

Mahaphanit, W. (October 2023). Learning to collaboratively communicate a shared wavelength. Social Interaction Lab (PI: Robert Hawkins) meeting. University of Wisconsin-Madison, WI.

Mahaphanit, W. (October 2023). Does shared reality generalize? Social Interaction Lab (PI: Robert Hawkins) meeting. University of Wisconsin-Madison, WI.

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

Mahaphanit, W. (August 2023). Does shared reality generalize? Methods in Neuroscience at Dartmouth (MIND) Summer School at Dartmouth College, Hanover, NH.

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

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

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

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

Mahaphanit, W. (December 2020). Computations in information-seeking and decision-making in Obsessive Compulsive Disorder. Learning, Memory, & Decision Lab (PI: Matthew Nassar) meeting. 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 Unconference 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., 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). Boston, 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 - Forthcoming). 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 Society (SANS). Toronto, Canada.

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

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

Mahaphanit, W. & Chang, L.J. (April 2023). Are shared experiences blind? Presented at the Social and Affective Neuroscience Society (SANS). 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 Multidisciplinary 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, DC.

AWARDS & HONORS

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| Diversity & Inclusion Conference Award Cognitive Science Society \$1,000 | 2024 |
| Neukom Travel Award Dartmouth College \$1,000 | July 2024 |
| Neukom Travel Award Dartmouth College \$1,000 | April 2023 |
| NSF Graduate Research Fellowship Honorable Mention | April 2022 |
| Sigma Xi Inductee | May 2018 |
| Deep Learning Datathon Brown University 1st Place | January 2018 |
| QuestBridge Scholar National College Match Finalist | 2014 |
| QuestBridge College Prep Scholar | 2013 |

FELLOWSHIPS & SCHOLARSHIPS

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| Karen T. Romer Undergraduate Teaching & Research Award Brown University \$3,500 | Summer 2017 |
| Karen T. Romer Undergraduate Teaching & Research Award Brown University \$1,000 | Spring 2014 |
| Sorensen Family Chancellor's Scholarship Brown University | 2015-2017 |
| Junior Volunteer Endowment Scholarship Maine Medical Center \$2,000 | Spring 2014 |

SCIENTIFIC & COMMUNITY OUTREACH

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| Software Engineer for Featured Trust Game & fMRI Operator PBS NOVA Episode: Who's in Control? | May 2023 |
| Podcast Guest Svelte Radio Episode: Svelte in Research at Dartmouth with Wasita & Eshin | April 2023 |
| Site Maintainer Website Working Group Women in Network Science (WiNS) Society | 2022-Present |
| Content Contributor & Site Maintainer Info Theory Book (cosanlab.github.io/info-theory-book) | 2022-Present |
| Content Contributor & Site Maintainer Intro to FMRI at Dartmouth (dartbrains.org) | 2021-Present |
| Pre-Grad Mentor & Consultant Project SHORT | 2020-Present |
| Contributing Software Engineer Honeycomb (brown-ccv.github.io/honeycomb-docs) | 2019-2021 |
| Rhode Island Brain Week Booth Organizer brainweekri.org | 2018-2020 |
| Rhode Island Brain Week Booth Volunteer brainweekri.org | 2017-2018 |

RESEARCH TRAINING

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| Methods in Neuroscience at Dartmouth (MIND) Summer School Dartmouth College | 2023 |
| Computational Neuroscience Neuromatch Academy | 2021 |
| Carney Computational Modeling Workshop Brown University | 2018 |

PROFESSIONAL & DEPARTMENTAL SERVICE

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| Social Lab (SLAB) Talk Series Co-organizer Dartmouth PBS | 2021-2024 |
| Consortium for Interacting Minds (CIM) Seminar Series Co-organizer Dartmouth PBS | 2021-2024 |
| Teaching Assistant Repository Creation & Organization Committee Dartmouth PBS | 2022-2023 |
| Meeting Harmonization Committee Dartmouth PBS | 2021-2023 |
| Transitioning from Intro to Programming to Career in Computation Alumni Panelist Brown CLPS | 2021 |
| Managing Minds (lab manager peer mentoring group) Founder & Organizer Brown Carney/CLPS | 2019-2021 |
| Cognitive Neuroscience DUG Alumni Career Panelist Brown CLPS | 2018 |