

Eshin Jolly

Dartmouth College
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Currently	Postdoctoral Fellow Center for Interacting Minds Center for Cognitive Neuroscience <u>Cosan Lab</u> , Dartmouth College, Hanover, NH PI: Luke Chang	2020–
Education	PhD, Cognitive Neuroscience NSF Graduate Fellow <u>Cosan Lab</u> , Dartmouth College, Hanover, NH Thesis: Social Cognitive Maps: A Relational Account of Person Representation and Memory Committee: <u>Luke Chang</u> , <u>Thalia Wheatley</u> , <u>Jeremy Manning</u> , <u>Janice Chen</u> BA, Brain and Cognitive Science; Psychology Minor: Music & Jazz Performance University of Rochester, Rochester, NY Thesis: Testing Domain Specificity: Conceptual Knowledge of Living and Non-living Things Committee: <u>Jessica Cantlon</u> , <u>Brad Mahon</u>	2012–2019 2006–2010
Employment	Senior UX Scientist <u>MoreMore AI</u> Media & Arts startup Technical Support Lead <u>Code for America (Upper Valley Brigade)</u> Rural Internet Project Scientific Advisor <u>Parsnip.ai</u> Food and Ed-tech startup Co-Founder & CTO <u>Parsnip.ai</u> Food and Ed-tech startup Project Manager <u>Rural Internet Project</u> Code for Upper Valley (Local Code for America Brigade) PhD Research Intern <u>Microsoft Research</u> Computational Social Science Group PIs: Duncan Watts & Sid Suri Lab Manager Harvard University, Cambridge, MA PI: Jason P. Mitchell	2023– 2022– 2021– 2020–2021 2019–2022 2016 2010–2012

Funding	Postdoctoral Fellow National Science Foundation, Career Award 1848370 (\$886,457, PI: Luke Chang) Neural and computational basis of guilt in decision-making	2019–
	Graduate Fellow National Science Foundation, Graduate Research Fellowship (\$90,000) Uncovering the representation of self: A multivariate approach	2013–2016
Research Experience	University of Rochester , Rochester, NY PIs: Jessica F. Cantlon & Bradford Z. Mahon Honors Thesis Student	2009–2010
	Baruch College , New York City, NY PI: Jennifer Mangels Research Assistant	2008–2010
	Mt Hope Family Center, University of Rochester , Rochester, NY PI: Sheree Toth; Mentor: Jack Peltz Research Assistant	2008–2010
Manuscripts In Prep	Jolly, E. , Sadhukha, S., Iqbal, M., Molani, Z., Walsh, T.M., Chen, J., Manning, J.R. & Chang, L.J. (in prep). The structure of social memory. Jolly, E. , Ranger, M.S. & Chang, L.J. (in prep). The neural basis of guilt diffusion in interpersonal harm-minimization. Jolly, E. , Chang, L.J. (in prep). Social cognitive maps: Encoding and reinstatement of neural patterns that reflect beliefs about social relationships. Jolly, E. (in prep). SvelteTurk: An open-source graphical application to simplify data collection via Amazon Mechanical Turk. [documentation site] Jolly, E. , Smith A., Gangadharan, A.A., Hoidal, A.S. & Chang, L.J. (in prep). Guilt-aversion motivates harm-minimization in surrogate decision-making.	
Under review/revision	Jolly, E.* , Cheong, J.H.*, Xie, T.* Byrne, S. Kenny, M. & Chang, L.J. (under revision). Py-Feat: Python Facial Expression Analysis Toolbox. arXiv preprint [toolbox] *Equal contribution Gao, X., Jolly, E. , Yu, H., Liu, H., Zhou, X., Chang, L. J. (under revision). The hidden cost of receiving favors: A theory of indebtedness. [bioRxiv preprint]	
Published	Jolly, E. , Farrens, M., Greenstein, N., Eisenbarth, H., Reddan, M.C., Andrew, E., Wager, T.D. & Chang, L.J. (2022). Recovering individual emotional states from sparse ratings using collaborative filtering. <i>Affective Science</i> . [Link] [toolbox] [data & materials]	2022
	Jolly, E. & Chang, L.J. (2021). Multivariate spatial feature selection in fMRI. <i>Social Cognitive and Affective Neuroscience</i> , 16(8), 795-806. [Link]	2021
	Jolly, E. & Chang, L.J. (2021). Gossip drives vicarious learning and facilitates social connections. <i>Current Biology</i> , 31, 1-11. [Link] [data & materials]	

Coverage: [New York Times](#), [VPR News](#), [PNAS Journal Club](#)

Chang, L.J., **Jolly, E.**, Cheong, J.H., Rapuano, K., Greenstein, N., Chen, P.A. & Manning, J.R. (2021). Endogenous variation in ventromedial prefrontal cortex state dynamics during naturalistic viewing reflects affective experience. *Science Advances*, 7(17), 1-17. [[Link](#)] [[data & materials](#)]

Jolly, E.*, Sadhukha, S.*, Chang, L.J. (2020). Response to Lynch et al: On measuring head motion and effects of head molds during fMRI. *NeuroImage*, 117484. [[Link](#)] [[data & materials](#)]

2020

Jolly, E.*, Sadhukha, S.*, Chang, L.J. (2020). Custom-molded headcases have limited efficacy in reducing head motion during naturalistic fMRI experiments. *NeuroImage*, 117207. [[Link](#)] [[data & materials](#)]

*Equal contribution

Chen, P. H. A., **Jolly, E.**, Cheong, J. H. & Chang, L. J. (2020). Intersubject representational similarity analysis reveals individual variations in affective experience when watching erotic movies. *NeuroImage*, 116851. [[PDF](#)] [[data & materials](#)]

Chen, P.A., Cheong, J.H., **Jolly, E.**, Elhence, H., Wager, T.D., Chang, L.J. (2019). Socially transmitted placebo effects. *Nature Human Behavior*, 3, 1295-1305. [[PDF](#)] [[data & materials](#)]

2019

Jolly, E.*, Tamir, D.I.*, Burum, B.A. & Mitchell, J.P. (2019). Wanting without enjoying: The social value of sharing experiences. *PLoS One*, 14(4), e0215318. [[PDF](#)] [[data & materials](#)] *Equal contribution

Jolly, E., & Chang, L.J. (2019). The Flatland Fallacy: Moving Beyond Low Dimensional Thinking. *Topics in Cognitive Science*, 1-22. [[PDF](#)] [[figure & simulation code](#)]

Jolly, E. (2018). Pymer4: Connecting R and Python for linear mixed modeling. *Journal of Open Source Software*, 3(31), 862. [[PDF](#)] [[documentation site](#)]

2018

Chang, L. J. & **Jolly E.** (2018). Emotions as computational signals of goal error. In A. Fox, R. Lapate, A. Shackman & R. Davidson (Eds), *The Nature of Emotion* (343-351). Oxford University Press. [[PDF](#)]

Cheong, J.C., **Jolly, E.**, Sul, S. & Chang, L.J. (2017). Computational Models in Social and Affective Neuroscience in Moustafa, A. (Eds), *Computational Models of Brain and Behavior* (229-245). Hoboken, NJ: Wiley. [[Link](#)]

2017

Rane, S.*, **Jolly, E.***, Park, A.*, Jang, H*. & Craddock, R.C. (2017). Developing predictive biomarkers using whole-brain classifiers: Application to the ABIDE I dataset. *Research Ideas and Outcomes*, 3:e12733. [[PDF](#)].

*Equal contribution

Moran, J.M., **Jolly, E.** & Mitchell, J.P. (2014). Spontaneous mentalizing predicts the fundamental attribution error. *Journal of Cognitive Neuroscience*, 26(3), 569-576. [[PDF](#)]

2011-2016

Moran, J.M., **Jolly, E.** & Mitchell, J.P. (2012). Social-cognitive deficits in normal aging. *Journal of Neuroscience*, 32(16), 5553-5561. [[PDF](#)]

Jolly, E. (2011). Testing domain specificity: Conceptual knowledge of living and non-living things. *The Yale Review of Undergraduate Research in Psychology*, 2, 94-118. [[PDF](#)]

2022-Present

[Py-feat](#)

Core Developer, [[Documentation](#)] [[Slides](#)] [[Github](#)]

downloads 23k

2020-Present

[Neighbors](#)

Core Developer, [[Documentation](#)] [[Github](#)]

downloads 6k

[SvelteTurk](#)

Project Author, [[Documentation](#)] [[Github](#)]

2017-Present

[Pymer4](#)

Project Author, [[Documentation](#)] [[Github](#)]

downloads 97k

2016-Present

[Nltools](#)

Core Developer, [[Documentation](#)] [[Video Talk](#)] [[Github](#)]

downloads 143k

Talks & Presentations

2022

Spontaneous Neural Representations of Social Relationships in Naturalistic Contexts.

Symposium talk at International Society for Research on Emotion, USC, Los Angeles, CA.

Emotion and Social Perception in Naturalistic Contexts: Perspectives from Affective Computing and Affective Neuroscience.

Symposium organizer at International Society for Research on Emotion, USC, Los Angeles, CA.

Introduction to Facial Expression Analysis with Py-Feat. [[Slides](#)]

Talk at Center for Interacting Minds, Dartmouth College, Hanover, NH.

2020

Social Cognitive Maps: A Relational Account of Person Representation and Memory.

Invited talk at Harvard University, Cambridge, MA.

Why Design Abstractions Matters for Analytics Tools: Neuroimaging analysis with Neuro-Learn. [[Video](#)]

Symposium talk at Scientific Computing with Python Virtual conference.

Spontaneous Neural Representations of Social Relationships in Naturalistic Contexts.

Symposium talk at Society for Affective Science, San Francisco, CA. (conference cancelled).

Methodological challenges in contemporary fMRI studies.

Invited talk at Neuroimaging Analysis Methods meeting, Princeton University, Princeton, NJ.

2019

Introduction to Git and Github.

Lecture at Methods in Neuroscience Computational Summer School, Dartmouth College, Hanover, NH.

Introduction to Git and Github.

Lecture at Methods in Neuroscience Computational Summer School,
Dartmouth College, Hanover, NH.

Introduction to Jupyter Notebooks for Interactive Data Analysis.

Lecture at Methods in Neuroscience Computational Summer School,
Dartmouth College, Hanover, NH.

Introduction to functional alignment methods for fMRI.

Lecture at Sao Paulo School of Advanced Science on Social and Affective
Neuroscience. Sao Paulo, Brazil.

Naturalistic approaches towards an understanding of social reasoning and
communication.

Invited talk, Stanford University, Stanford, CA.

The social benefits of gossip

Presentation at the New England Research on Decision-Making conference,
Brown University, Providence, RI.

Computational tools for neuroscience: Containers and jupyter notebooks.

Lecture at Methods in Neuroscience Computational Summer School,
Dartmouth College, Hanover, NH.

Introduction to Singularity: Running containers on a HPC.

Tutorial at Graduate research roundtable workshop, Dartmouth College,
Hanover, NH.

Introduction to Git and Github for psychologists.

Presentation at the Reproducible Psychological Science workshop at the
Annual Meeting for the Association for Psychological Science, Boston, MA.

Interpersonal dynamics and the inelasticity of social guilt.

Presentation at the Boston Area Moral Cognition Group, Boston, MA.

Interpersonal dynamics and the inelasticity of social guilt.

Presentation at Affectiva, Boston, MA.

Spontaneous impression-formation about parasocial relationships.

Presentation at the Annual Meeting of the Social and Affective Neuroscience
Society, Los Angeles, CA.

Introduction to Jupyter notebooks (and why you should love them!).

Tutorial at Brainhack Dartmouth College, Hanover, NH

Research Methods for Conducting Synchronous Online Experiments.

Guest Lecture at Dartmouth College, Hanover, NH.

Contemporary fMRI pre-processing: Introduction to Nipype and Docker.

Tutorial at Dartmouth College, Hanover, NH.

State of the Data: Annual Dartmouth Brain Imaging Center Quality Assurance
Report.

Presentation at Dartmouth College, Hanover, NH.

Field experiments on human prosociality using Mechanical Turk.

Presentation at Microsoft Research, New York, NY.

Research Methods for Conducting Synchronous Online Experiments.

Guest Lecture at Dartmouth College, Hanover, NH.

The Social Benefits of Gossip.

Guest Lecture at Dartmouth College, Hanover, NH.

The Social Benefits of Gossip.

Presentation at the Social Brain Sciences Brown Bag series at Dartmouth College, NH.

Posters & Conference Proceedings

2021

Jolly, E. & Chang, L.J. (2021). Spontaneous Neural Representations of Social Relationships in Naturalistic Contexts.*

Poster at Social Affective Neuroscience Society meeting (online conference; in-person cancelled due to COVID-19)

*Winner, SANS Poster Award

2020

Jolly, E. (2020). Pymer4: Bringing R's Powerful Mixed-modeling to Python.*

Virtual poster at Scientific Computing with Python Virtual Conference. (in-person cancelled).

*Winner, Scipy Scholarship

2019

Jolly, E. & Chang, L.J. (2019). Gossip drives vicarious learning and facilitates robust social connections.

Poster at Social and Affective Neuroscience Society meeting, Miami, FL.

Cheong, J.C., Chen, P.A., **Jolly, E.**, Elhence, H., Wager, T.D., Chang, L.J. (2019). Socially transmitted placebo effects.

Poster at Society for Affective Science meeting, Boston, MA.

2018

Jolly, E., Reddan, M.C., Gianaros, P.J., Manuck, S.M. Chang, L.J., Wager, T.D. (2018). NeuroLIME: A novel tool for explaining the predictions of complex brain models.

Poster at Social and Affective Neuroscience Society meeting, New York, NY.

Reddan, M.C., **Jolly, E.**, Wager, T.D. (2018). NeuroLIME: A novel tool for explaining the predictions of nonlinear neuroimaging classifiers.

Poster at the Organization for Human Brain Mapping meeting, Singapore, Singapore.

Reddan, M.C., **Jolly, E.**, Wager, T.D. (2018). NeuroLIME: A novel tool for explaining the predictions of nonlinear neuroimaging classifiers.

Poster at the Computational and Systems Neuroscience meeting, Denver, CO.

2017

Jolly, E. & Chang, L.J. (2017). Gossip drives vicarious learning and facilitates robust social connections.

Poster at the Annual Meeting of the Association for Psychological Science, Boston, MA.

Cheong, J.H., **Jolly, E.** & Chang, L.J. (2017). A window into the mind: A computational approach to measuring emotions in response to naturalistic stimuli.

Poster the Annual Meeting of the Social and Affective Neuroscience Society, Los Angeles, CA.

2016

Jolly, E. & Chang, L.J (2016). Groups, gossip and social dilemmas.

Poster at the International Conference on Computational Social Science, Evanston, IL.

2015

Jolly, E., Tamir, D.I. & Mitchell, J.P. (2015). The social value of sharing

experiences.*

*Winner, SANS Poster Award

Poster at the Annual Meeting of the Social and Affective Neuroscience Society, Boston, MA.

2012

Moran, J.M., **Jolly, E.**, & Mitchell, J.P. (2012). Spontaneous mentalizing supports the fundamental attribution error.

Poster the Annual Meeting of the Cognitive Neuroscience Society, Chicago, IL.

2010

Peltz, J.S. Toth, S.L., Rogosch, F.A., **Jolly, E.**, & Cicchetti, D. (2010). Paternal emotional availability's effects on children's socioemotional functioning in maternal depression contexts.

Poster at the Annual Meeting of the Association for Psychological Science, Boston, MA.

Awards

2022

Complex Systems Summer School (CSSS)
Santa Fe Institute

2021

Mistletoe Research Fellowship finalist
Dartmouth College

2020

Scientific Computing with Python Scholarship Award
Scipy

Poster Award
SANS

2019

Kavli Summer Institute in Cognitive Neuroscience
UC Santa Barbara

Thayer Consulting Case Competition 1st Place
Thayer School of Engineering, Dartmouth College

Hack Dartmouth Finalist
Dartmouth College

2018

Hack Dartmouth Best Community Hack
Dartmouth College

Sao Paulo Summer School on Social and Affective Neuroscience (SPSAN)
Mackenzie Presbyterian University, Sao Paulo

Graduate Arts and Science Travel Award
Dartmouth College

PBS Graduate Travel Award
Dartmouth College

Neukom Institute Travel Award
Dartmouth College

2017

Graduate Alumni Research Award
Dartmouth College

PBS Graduate Travel Award
Dartmouth College

Methods in Neuroscience Computational Summer School Dartmouth College	
Summer School in Social Neuroscience and Neuroeconomics Duke University	
Social Affective Neuroscience Society Trainee Data Blitz Award SANS	
Human Neuroimaging Methods Travel Award OHBM	
	2016
Hack Dartmouth 2nd Place project award Dartmouth College	
Neurohackweek Summer School University of Washington eScience Institute	
	2015
Social Affective Neuroscience Society Poster Award SANS	
PBS Graduate Travel Award Dartmouth College	
	2013-2016
National Science Foundation Graduate Research Fellowship Dartmouth College	
	2010
BCS Dept: Highest Honors in research University of Rochester	
	2006-2010
Wilder-Trustee Scholarship University of Rochester	
	2019
Methods in Neuroscience Computational Summer School (TA) Dartmouth College	
	2018
Functional Alignment Techniques in fMRI (Guest Lecturer) Mackenzie Presbyterian University, SPSAN, Sao Paulo, Brazil	
Methods in Neuroscience Computational Summer School (TA) Dartmouth College	
	2017
Methods in Neuroscience Computational Summer School (TA) Dartmouth College	
Online research methods for the experimental study of social behavior (Guest Lecturer) Dartmouth College	
	2016
Online research methods for the experimental study of social behavior (Guest Lecturer) Dartmouth College	
Social Psychology (Guest Lecturer) Dartmouth College	
	2015
Brain Mapping with functional MRI (TA and Lecturer)	

Teaching

	Dartmouth College	
	Laboratory in Psychological Science* (TA and Lecturer)	
	*Mentored award winning undergraduate group	
	Dartmouth College	2014
	Experimental Design and Methodology (TA and Lecturer)	
	Dartmouth College	2013
	Laboratory in Psychological Science (TA and Lecturer)	
	Dartmouth College	2011
	Introduction to MATLAB for Behavioral Research (ad-hoc workshop)	
	Harvard University	
	Mind Perception (ad-hoc workshop)	
	Harvard University	
Mentorship	Wasita Mahaphanit	2022-
	Graduate Student	
	Dartmouth College	
	Sushmita Sadhukha	2022-
	Graduate Student	
	Dartmouth College	
		2021-2022
	Maxwell Ranger '22	
	Honors Thesis	
	Dartmouth College	2017-2021
	Maryam Iqbal '21	
	Presidential Scholar/Honors Thesis	
	Dartmouth College	2020-2021
	Liza Begunova '21	
	Honors Thesis	
	Dartmouth College	2019-2020
	Max Farrens '20	
	Full-time Research Assistant	
	Dartmouth College	2017-2019
	Nathan P. Greenstein '19	
	Presidential Scholar	
	Dartmouth College	
	Sushmita Sadhukha '18	
	Full-time Research Assistant	
	Dartmouth College	2015-2018
	Arati A. Gangadharan '18	
	Honors Thesis	
	Dartmouth College	2015-2017
	Hirsh Elhence '17	

Presidential Scholar
Dartmouth College

Technical Skills

Programming Languages

Python, Javascript, Matlab, R, Bash

Frontend Web Development

HTML, CSS, Svelte, Vue

Backend/Fullstack/App Development

Node, Express, Meteor, MongoDB, Firebase, Flask, Electron

Stimulus Presentation

Psychopy, Psychophysics toolbox, E-prime, Presentation

Data Analysis

Scientific-Python, Statsmodels, Scikit-learn, Lme4

Neuroimaging Analysis

FSL, AFNI, SPM, Nipype, Nilearn

Data Visualization

Seaborn/Matplotlib, D3, Dash/Plotly, ggplot

Dev Ops

Git/Github, TravisCI, Tox, Pytest, Moab-Torque

Professional Activities

Reviewer

Cerebral Cortex, Neuroimage, Human Brain Mapping, SCAN,
Neuropsychologia, Cognition and Emotion, JESP, PLoS One, GigaScience,
JOSS

ad-hoc: Nature Communications, SIGCHI, Frontiers in Psych, JPSP

Society Memberships

Social and Affective Neuroscience Society, Society for Affective Science,
Organization for Human Brain Mapping, Cognitive Neuroscience Society,
Society for Personality and Social Psychology

Leadership & Community

Committee Member

Inclusivity, Diversity, and Culture Advisory Committee
Dartmouth College, Hanover, NH

2019-2022

VP of Client Outreach

Dartmouth Graduate Consulting Group, Hanover, NH

2018-2020

Board Member

Dartmouth College Postdoctoral Association, Hanover NH

2020-2021

Co-Founder

Line@ Project
Dartmouth College, Hanover, NH

2017-2020

Organizing committee member

Dartmouth Brainhack, Hanover, NH

2017

Station Leader

2014

GWISE Science day for local middle schools
Dartmouth College, Hanover, NH

2013-2015

Primary Organizer

Social Brain Sciences Symposium talk series
Dartmouth College, Hanover, NH

Graduate Representative

Social Area Graduate Student Representative
Dartmouth College, Hanover, NH

2019-

Freelance Software Developer

Web and Desktop Application Development

Private Tutor

Introductory data analysis with Python

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Last updated: February 2023