

# NUTTIDA RUNGRATSAMEETAWEEMANA

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## EMPLOYMENT

**Postdoctoral fellow, The Salk Institute & The U.S. Army Combat Capabilities Development Command** July 2020 - Present  
Computational Neurobiology Laboratory (PI: Dr. Terrence J. Sejnowski)  
Army Research Laboratory (PI: Dr. Javier O. Garcia)

## EDUCATION

**University of California, San Diego** La Jolla, CA  
**Ph.D.** in *Neurosciences with a Specialization in Computational Neurosciences* May 2020  
*Neural Dynamics of Probabilistic Perceptual Decision Making in the Human Brain*  
Research Advisors: Dr. John T. Serences & Dr. Larry R. Squire  
**M.S.** in *Neurosciences with a Specialization in Computational Neurosciences* August 2016  
Research Advisors: Dr. John T. Serences & Dr. Larry R. Squire  
**Middlebury College** Middlebury, VT  
**B.S.** in *Mathematics and Neuroscience, Highest Honor* May 2014  
Mathematics Thesis: *A Mathematical Approach to Selective Visual Attention*  
Neuroscience Thesis: *The Influence of Internal and External Arousal on Memory*  
Research Advisors: Dr. Jason Arndt and Dr. Michael Olinick

## AWARDS AND HONORS

U.S. Army Research Laboratory Predoctoral Fellowship 2018 - 2020  
Training Grant, UCSD Neurosciences Graduate Program 2014 - 2015  
College Scholar Award, Middlebury College 2010 - 2014  
Senior Research Fellowship, Middlebury College 2013 - 2014  
Middlebury College Research Travel Grant November 2013  
• Awarded to present a poster at *44th Annual Meeting of the Society for Neuroscience*  
Middlebury College Summer Research Fellowship Summer 2012  
• Awarded to intern in the lab of Dr. John T. Serences, UCSD  
Neuroscience Undergraduate Research Scholarship 2009 - 2014  
• Awarded by the Ministry of Science and Technology of Thailand

## PUBLICATIONS

- [1] **Rungratsameetaweemana N**, Itthipuripat S, Garcia, JO, Serences JT. Differential temporal dynamics of top-down control on probabilistic perceptual decision making. Preprint, 2020.
- [2] Nelli S, Itthipuripat S, **Rungratsameetaweemana N**, Serences JT. The speed-accuracy tradeoff reveals flexible access to accumulating sensory evidence during human decision-making. Under revision.
- [3] Lainscsek C\*, **Rungratsameetaweemana N\***, Cash SS, Sejnowski TJ. Cortical chimera states predict epileptic seizures. *Chaos: An Interdisciplinary Journal of Nonlinear Science*, 29: 121106, 2019.
- [4] **Rungratsameetaweemana N**, Squire LR, Serences JT. Preserved capacity for learning statistical regularities and directing selective attention after hippocampal lesions. *The Proceedings of the National Academy of Sciences*, 116 (39): 19705-19710, 2019.
- [5] **Rungratsameetaweemana N**, Serences JT. Dissociating the impact of attention and expectation on early sensory processing. *Current Opinion in Psychology.*, 29: 181-186, 2019.
- [6] **Rungratsameetaweemana N\***, Itthipuripat S\*, Salazar A, Serences JT. Expectations do not alter early sensory processing during perceptual decision-making. *Journal of Neuroscience*, 38 (24): 5632-5648, 2018.
- [7] **Rungratsameetaweemana N**, Squire, LR. Preserved capacity for scene construction and shifts in perspective after hippocampal lesions. *Learning & Memory*, 25: 347-351, 2018.

- [8] Itthipuripat S, Garcia, JO, **Rungratsameetaweemana N**, Sprague TC, Serences JT. Changing the spatial scope of attention alters patterns of neural gain in human cortex. *Journal of Neuroscience*, 34(1): 112-123, 2014.

\* these authors made equal contributions

## INVITED TALKS

- [1] Probabilistic information processing in humans and recurrent neural networks. *Diversity and Science Lecture Series*, UCSD. December, 2020.
- [2] Uncovering dynamical chimera states in the human brain. *Intelligent and Complex Systems Research Seminar Series*, Chulalongkorn University, Thailand. June, 2020.
- [3] Temporal dynamics of probabilistic decision making. *Neuroscience and Psychology Research Talk Series*, Middlebury College. January, 2020.

## CONFERENCE TALKS

- [1] **Rungratsameetaweemana N**, Kim R, Sejnowski TJ. Probabilistic information processing in humans and recurrent neural networks. *Neuromatch 3.0 Conference*. October, 2020.
- [2] **Rungratsameetaweemana N**, Lainscsek C, Cash SS, Sejnowski TJ. Cortical chimera states as predictors for epileptic seizures. Research spotlight, *IEEE Engineering in Medicine and Biology Society symposium and workshop on Brain, Mind, and Body: Cognitive Neuroengineering for Health and Wellness*. December, 2019.
- [3] **Rungratsameetaweemana N**, Itthipuripat S, Salazar A, Serences JT. Expectation influences late stages of information processing. *18th Annual Meeting of the Vision Sciences Society*. May, 2018.
- [4] **Rungratsameetaweemana N**, Olinick M. Mathematical implications of the normalization model of attention. *Annual Conference of Women in Mathematics of New England*. September, 2012.

## ABSTRACTS

- [1] **Rungratsameetaweemana N**, Lainscsek C, Garcia JO, Bansal K, Cash SS, Sejnowski TJ. Uncovering dynamical states through concurrent electroencephalography (EEG) and electrocorticography (ECoG). *Virtual Meeting of the Cognitive Neuroscience Society*. June, 2020.
- [2] **Rungratsameetaweemana N**, Lainscsek C, Cash SS, Sejnowski TJ. Cortical chimera states as predictors for epileptic seizures. *17th Annual Computational and Systems Neuroscience (Cosyne) Meeting*. February, 2020.
- [3] **Rungratsameetaweemana N**, Lainscsek C, Cash SS, Sejnowski TJ. Cortical chimera states as predictors for epileptic seizures. *IEEE Engineering in Medicine and Biology Society symposium and workshop on Brain, Mind, and Body: Cognitive Neuroengineering for Health and Wellness*. December, 2019.
- [4] **Rungratsameetaweemana N**, Itthipuripat S, Serences JT. Dissociable modulation of top-down control on perceptual decision making. *19th Annual Meeting of the Vision Sciences Society*. May, 2019.
- [5] **Rungratsameetaweemana N**, Schmaelzle R, Bansal K, Wasylshyn N, Roy H, Lauharatanahirun N, Johnson T, Fernandez R, O'Donnell M, Falk E, Metcalfe J, Vettel JM, Garcia JO. Capturing communication success of driver-passenger dyads during real-world driving. *9th International Conference of the IEEE Engineering in Medicine and Biology Society on Neural Engineering*. March, 2019.
- [6] Garcia JO, Bansal K, **Rungratsameetaweemana N**, Wasylshyn N, Roy H, Lauharatanahirun N, Johnson T, Fernandez R, Falk E, Metcalfe J, Vettel JM. Brain network communities between driver-passenger dyads capture successful communication while driving. *9th International Conference of the IEEE Engineering in Medicine and Biology Society on Neural Engineering*. March, 2019.
- [7] **Rungratsameetaweemana N**, Vettel JM, Oliva JB, Verstynen T, Serences JT, Garcia JO. Intrinsic neural oscillations modulate feature selectivity in human visual cortex. *48th Annual Meeting of the Society for Neuroscience*. November, 2018.

- [8] **Rungratsameetaweemana N**, Itthipuripat S, Serences JT. Temporal dynamics of prior expectations on human perceptual decision-making. *41st Annual European Conference on Visual Perception*. August, 2018.
- [9] **Rungratsameetaweemana N**, Squire LR, Serences JT. Effects of attention and expectation on perceptual decision making after medial temporal lobe lesions. *47th Annual Meeting of the Society for Neuroscience*. November, 2017.
- [10] **Rungratsameetaweemana N**, Itthipuripat S, Barker E, Wagstaff L, Serences JT. Task-irrelevant contextual expectation impairs orientation discrimination performance. *16th Annual Meeting of the Vision Sciences Society*. May, 2016.
- [11] **Rungratsameetaweemana N**, Itthipuripat S, Barker E, Salazar A, Serences JT. Dissociable effects of attention and expectation on perceptual decision making. *45th Annual Meeting of the Society for Neuroscience*. October, 2015.
- [12] **Rungratsameetaweemana N**, Itthipuripat S, Serences JT. Dissociable effects of sensory evidence and expectation during visual discrimination tasks. *15th Annual Meeting of the Vision Sciences Society*. May, 2015.
- [13] **Rungratsameetaweemana N**, Arndt J. The influence of internal and external arousal on memory. *55th Annual Meeting of the Psychonomic Society*. November, 2014.
- [14] Itthipuripat S, Garcia JO, **Rungratsameetaweemana N**, Sprague TC, Serences JT. Changing the spatial scope of attention alters patterns of neural gain in human cortex. *43rd Annual Meeting of the Society for Neuroscience*. November, 2013.

## OUTREACH & MEDIA

Featured news article on <i>The U.S. Army CCDC Research Spotlight</i>	June 2020
Diversity Recruitment Committee Member, Neurosciences Graduate Program, UCSD	2015 - 2020
<ul style="list-style-type: none"> <li>Represented UCSD at Annual Meeting of the Society for Advancement of Chicanos/Hispanics and Native Americans in Science</li> </ul>	October 2019
Xiao Pengyou, an outreach program for local Asian adoptees in Vermont	2011-2014
Team Leader, Pakchong Community Science Outreach, Thailand	2011-2013
Executive Board Member, Southeast Asian Service Leadership Network (SEALNet)	2011
Middlebury College Community Friends Outreach Program	2011
National Mathematics and Science Outreach Team, Thailand	2010

## MENTORSHIP & TEACHING

Computational and Systems Neuroscience (Cosyne) 2021 Mentoring Forum	Winter 2020
<b>Research Mentor for Graduate and Undergraduate Students</b>	2019 - 2020
The Salk Institute & The U.S. Army Research Laboratory	
<ul style="list-style-type: none"> <li>Students: Mia Borzello (UCSD), Brianna Marsh (UCSD), Julia Phillips (Fordham U)</li> </ul>	
<b>Guest Lecturer for Neuroscience: From Brain to Behaviors, UCSD</b>	Summer 2019
<b>Graduate Student Mentor for Undergraduate Students</b>	2014-2020
Perception and Cognition Laboratory, UCSD	
<ul style="list-style-type: none"> <li>Students: Emily Barker, Lili Wagstaff, Jimmy Yu, Chenlu Wang, Tzu-en Wang, Kevin Diep, Emely Anaya, Chenlu Wang</li> </ul>	
<b>Teaching Assistant for Special Topics in Psychology Course</b>	Fall 2015
Department of Psychology, UCSD	
<b>Teaching Assistant for Department of Mathematics, Middlebury College</b>	
Multivariable Calculus Course	Spring 2013
Differential Equations Course	Fall 2013
Heart of Mathematics Course	Winter 2012
Calculus II Course	2011 - 2012
<b>Teaching Assistant for Department of Neuroscience &amp; Psychology, Middlebury College</b>	
Neurophysiology; Psychological Statistics; Introduction to Psychology Course	Fall 2013

**Lecturer for Geometry Course and Calculus I Course**  
Roong Arun High School, Thailand

Summer 2011

**Guest Lecturer for General Biology Course**  
Princess Chulabhorn's College, Thailand

Summer 2010