Eshed Margalit

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Education

Stanford University | 2016 - Present
PhD Candidate, Neurosciences Program

University of Southern California | 2012 - 2016
B.S. with Honors in **Computational Neuroscience**
Minor in **Computer Science**
Cumulative Major and Minor GPA: **3.99**

Research

Stanford NeuroAI Lab | 2016 - Present
Modeling the structure, development, and function of primate visual cortex
PI: Dr. Daniel Yamins

Stanford Vision and Perception Neuroscience Lab | 2016 - Present
Characterization of human higher visual cortex via ultra-high-resolution fMRI
PI: Dr. Kalanit Grill-Spector

USC Image Understanding Lab | 2014 – 2016
Interrogating object representations in visual cortex and psychophysical correlates of developmental prosopagnosia
PI: Dr. Irving Biederman

USC Emotion and Cognition Lab | 2013 – 2014
Investigating the role of the noradrenergic arousal system in aging and memory
PI: Dr. Mara Mather

Publications

Published

1. Clewett, D., Lee, T.H., Greening, S., Ponzio, A., **Margalit, E.**, & Mather, M. (2016). Neuromelanin marks the spot: Identifying a locus coeruleus biomarker of cognitive reserve in healthy aging. *Neurobiology of Aging, 37, 117-126*.

2. **Margalit, E.**, Shah, M.P., Tjan, B.S., Biederman, I., Keller, B., & Brenner, R. (2016). The lateral occipital complex shows no net response to object familiarity. *Journal of Vision. Journal of Vision*, *16*(11).

3. **Margalit, E.**, Herald, S.B., Yue, X., von der Malsburg, C., & Biederman, I. (2016). An applet for the Gabor Scaling of the Differences Between Complex Stimuli. *Attention, Perception, & Psychophysics, 78(8), 2298-2306.*

4. **Margalit, E.**, Biederman, I., Tjan, B.S., and Shah, M.P. (2017) What is actually affected by the scrambling of objects when localizing the lateral occipital complex? *Journal of Cognitive Neuroscience, 20(9), 1595 - 1604.*

5. Biederman, I., Shilowich, B.E., Herald, S.B., **Margalit, E.**, Maarek, R., Meschke, E.X. and Hacker, C.M. (2018). The cognitive neuroscience of person identification. *Neuropsychologia, 116B, 205-214.*

6. Kay, K., Jamison, K. W., Vizioli, L., Zhang, R., **Margalit, E.**, and Ugurbil, K. (2019). A critical assessment of data quality and venous effects in sub-millimeter fMRI. *NeuroImage*, 189, 847-869.

7. **Margalit, E.**, Herald, S.B., Meschke, E.X., Irawan, I., Maarek, R. and Biederman, I. (2019). Visual noise consisting of X-junctions has only a minimal adverse effect on object recognition. *Attention, Perception, & Psychophysics*, 82, 995–1002.

8. **Margalit, E.**, Jamison, K.W., Weiner, K.S., Vizioli, L., Zhang, R., Kay, K.N. and Grill-Spector, K. (2020). Ultra-high-resolution fMRI of human ventral temporal cortex reveals differential representation of categories and domains. *Journal of Neuroscience*, 40(15), 3008-3024.

Preprints

1. Rosenke, M., van den Hurk, J., **Margalit, E.**, de Beeck, H. P. O., and Weiner, K. S. (2020). Extensive individual differences of category information in ventral temporal cortex in the congenitally blind. *bioRxiv*.

2. Crawford, J., **Margalit, E.**, Grill-Spector, K., and Poltoratski, S. (2020). Validation and generalization of pixel-wise relevance in convolutional neural networks trained for face classification. *arXiv.*

Conference Presentations and Posters

Talks

1. Margalit, E., Jamison, K., Weiner, K.S., Vizioli, L., Zhang, R., Kay, K.N. and Grill-Spector, K. (2018). Differential representation of object category information across lateral and medial

ventral temporal cortex revealed with ultra-high-resolution fMRI. Presented at the Annual Meeting of the Society for Neuroscience, San Diego, CA. November.

2. Margalit, E., Jamison, K., Weiner, K.S., Vizioli, L., Zhang, R., Kay, K.N. and Grill-Spector, K. (2019). Ultra-high-resolution fMRI reveals differential representation of categories and domains across lateral and medial ventral temporal cortex. Presented at the Annual Meeting of the Vision Sciences Society, St. Pete Beach, FL. May.

Posters

1. Biederman, I., Herald, S. B., Xu, X., Amir, O., Shilowich B. E., & **Margalit, E.** (2015). Phonagnosia, a Voice Homologue to Prosopagnosia. Poster presented at the Annual Meeting of the Vision Sciences Society, St. Petersburg Beach, FL. May.

2. Clewett, D., Lee, T.H., Greening, S. G., Ponzio, A., **Margalit, E.**, & Mather M. (2015). Neuromelanin Marks the Spot: A Locus Coeruleus Substrate of Cognitive Reserve in Healthy Aging. USC Neuroscience Graduate Student Symposium, Los Angeles, CA. Jan.

3. Biederman, I., **Margalit, E.**, Tjan B.S., & Shah, M.P. (2016). What is actually affected by the scrambling of objects when localizing LOC? Presented at the Annual Meeting of the Vision Sciences Society, St. Petersburg Beach, FL. May.

4. **Margalit, E.**, Yue, X., & Biederman, I. (2016). Impaired Face and Non-face Discrimination in Developmental Prosopagnosics (DPs). Presented at the Annual Meeting of the Vision Sciences Society, St. Petersburg Beach, FL. May.

5. Irawan, I., **Margalit, E**., Herald, S.B., & Biederman, I. (2016). Vertices are Effective in Perceptual Grouping (and Ungrouping). Presented at the Annual Meeting of the Vision Sciences Society, St. Petersburg Beach, FL. May.

6. Biederman, I., **Margalit, E.**, Tjan, B. S., & Shah, M. P. (2016). What is actually affected by the scrambling of objects when localizing LOC? Talk presented at the Annual Meeting of the Society of Experimental Psychologists. Columbia University, New York. April.

7. Biederman, I., **Margalit, E.,** Maarek, R., Meschke, E.X., Shilowich, B.E., Hacker, C.M., Juarez, J.J., Seamans, T.J. and Herald, S.B. (2017). What is the nature of the perceptual deficit in congenital prosopagnosia? Presented at the Annual Meeting of the Vision Sciences Society, St. Petersburg Beach, FL. May.

8. **Margalit, E.**, Lee, H., DiCarlo, J.J. and Yamins, D.L.K. (2018). Pinwheel-like Iso-Orientation Domains in a Convolutional Neural Network Model. Presented at the Annual Meeting of the Vision Sciences Society, St. Petersburg Beach, FL. May.

9. **Margalit, E.**, Lee, H., Marques, T., DiCarlo, J.J. and Yamins, D.L.K. (2020). Correlation-based spatial layout of deep neural network features generates ventral stream topography. Presented at COSYNE 2020, Denver, CO. February.

Skills

Programming
Python, MATLAB, R, Javascript, HTML/CSS, Git/GitHub

Specialized Software
Tensorflow, FSL, Freesurfer, React, Psychtoolbox

Methods
Deep neural network training, modification, and evaluation, fMRI, Behavioral/Psychophysical research, Large scale surveys, Patch-clamp physiology, Spike Sorting

Awards and Grants

NSF Graduate Research Fellowship Program Fellow | 2016 – 2021
NSF fellowship recognizes and supports outstanding graduate students in NSF-supported science, technology, engineering, and mathematics disciplines

Graduate Trainee, Stanford Mind, Brain, Computation, and Technology | 2018 – Present
Traineeship awarded for the pursuit of multi-disciplinary research in the area of computational neuroscience

USC Neuroscience Outstanding Student of the Year | 2016
Awarded to USC's best neuroscience student with senior standing

Brian Philip Rakusin Neuroscience Award | 2015
Awarded to USC's best neuroscience student with sophomore or junior standing

USC Discovery Scholar | 2016
Awarded to students who excel in the classroom while demonstrating the ability to create exceptional new scholarship

USC Provost's Undergraduate Research Fellowship | 2013-2016
Five-time recipient of award established to provide support to student researchers

USC SOAR (Student Opportunities for Academic Research) Grant | 2015
Grant supporting undergraduate research with a faculty mentor

USC Dean's Scholarship | 2012-Present
Merit-based tuition scholarship

George H. Mayr Scholarship Foundation | 2015
Awarded to outstanding students from California in the college of letters, arts, and sciences

USC University Trustees Award | 2016
Awarded for highest GPA among undergraduate males at the University

Phi Beta Kappa Honor Society | 2015

Teaching

Teaching Assistant, Introduction to Perception (PSYCH 30) | Fall 2017, 2018
Teaching Assistant, Stanford Intensive Neuroscience (SIN) Bootcamp | Fall 2017
Instructor, Stanford Splash
Instructor, Stanford Brain Day

Service

Chair, SfN Nanosymposium: Extrastriate Vision | 2018
Co-leader, Stanford Computational Neuroscience Journal Club
Reviewer, *eLife*
Student Representative, Stanford Neurosciences PhD Program Student Program Committee | 2018
Mentor and workshop leader, for NSF GRFP Application | 2017 – 2019
Student Speaker Representative, Stanford Neurosciences PhD Program | 2017 – 2018
Mentor, Stanford Biosciences Student Association | 2017 - 2018
Student Representative, USC Undergraduate Neuroscience Executive Committee | 2015 - 2016
Team Captain, USC Cross Country Club | 2014-2015