Yuanning Li

Curriculum Vitae

5551 Centre Ave Apt 117
Pittsburgh, PA 15232
(412) 979 0351
ynli@cmu.edu
yuanningli.github.io

Education

2014–2018 (expected) **Ph.D.**, *Carnegie Mellon University, Pittsburgh, PA*.
Joint Neural Computation and Machine Learning Ph.D. program
Dissertation: Neural dynamics and interactions in the human ventral visual pathway
Committee: Avniel Singh Ghuman (co-advisor), Max G. G'Sell (co-advisor), Robert E. Kass, Christopher I. Baker

2011–2013 **M.S.**, *Carnegie Mellon University, Pittsburgh, PA*.
Electrical and Computer Engineering

2007–2011 **B.S.**, *Beihang University (BUAA), Beijing, China*.
Electrical Engineering, School of Advance Engineering (Honors College)

Research Experience

2014–present **Graduate Research Assistant**, *Carnegie Mellon University*, Pittsburgh, PA.
Center for the Neural Basis of Cognition
Advisors: Avniel Ghuman and Max G'Sell

2013–present **Graduate Research Assistant**, *University of Pittsburgh*, Pittsburgh, PA.
School of Medicine, Department of Neurological Surgery
PI: Avniel Ghuman

2012–2013 **Graduate Research Assistant**, *Carnegie Mellon University*, Pittsburgh, PA.
Department of Electrical and Computer Engineering
PIs: Byron Yu and Xin Li
Projects: statistical structure of multi-area neural population activity during an attention task; neural decoding algorithm for brain-computer interface

Awards and Honors

2018 Trainee Professional Development Award (TPDA), Society for Neuroscience (SfN)
2018 Fellow of Kavli Summer Institute in Cognitive Neuroscience, Lake Tahoe, CA
2015 Fellow of Summer Institute of Cognitive Neuroscience, Santa Barbara, CA
2015 Multimodal Neuroimaging Training Program (MNTP, NIH training grant), CMU-Pitt
2014 R. K. Mellon Presidential Fellowship, CMU
2012 Carnegie Institute of Technology Dean's Fellowship, CMU
2010 Meritorious Winner, Mathematical Contest in Modeling (MCM), USA
2009–2011 Three times First Prize Excellent Student Scholarship (top 10%), Beihang University

Publications

In progress

2018+ **Yuanning Li**, R. Mark Richardson, Max G'Sell, and Avniel Singh Ghuman. Endogenous activity modulates category tuning in ventral temporal cortex and influence perceptual behavior (manuscript in preparation for submission)

2018+ Matthew Boring, Elizabeth Hirshorn, **Yuanning Li**, Michael Ward, R. Mark Richardson, Julie Fiez, Avniel Singh Ghuman. The left midfusiform gyrus interacts with early visual cortex and the anterior temporal lobe to support word individuation (preprint doi: `https://doi.org/10.1101/411579`)

Published journal articles

2018 **Yuanning Li**, R. Mark Richardson, and Avniel Singh Ghuman. Posterior Fusiform and Midfusiform Contribute to Distinct Stages of Facial Expression Processing. *Cerebral Cortex* (2018). doi: `10.1093/cercor/bhy186`

2017 **Yuanning Li**, R. Mark Richardson, and Avniel Singh Ghuman. Multi-Connection Pattern Analysis: decoding the representational content of neural communication. *NeuroImage*. 162 (2017) pp. 32-44. doi: `10.1016/j.neuroimage.2017.08.033`

2017 Hassan Albalawi, **Yuanning Li**, and Xin Li. Training Fixed-Point Classifiers for On-Chip Low-Power Implementation. *ACM Transactions on Design Automation of Electronic Systems (TODAES)*. 22, no. 4 (2017): 69. doi: `10.1145/3057275`

2016 Elissa Aminoff, **Yuanning Li**, John Pyles, Michael Ward, R. Mark Richardson, Avniel Singh Ghuman. Associative hallucinations result from stimulating left ventral temporal cortex. *Cortex*. 83, (2016): 139-144. doi: `10.1016/j.cortex.2016.07.012`

2016 Elizabeth Hirshorn*, **Yuanning Li*** (co-first authors), Michael Ward, R. Mark Richardson, Julie Fiez, and Avniel Singh Ghuman. Decoding and disrupting left midfusiform gyrus activity during word reading. *Proceedings of the National Academy of Sciences*. 113, no. 29 (2016): 8162-8167. doi: `10.1073/pnas.1604126113`

2014 Avniel Singh Ghuman, Nicolas Brunet, **Yuanning Li**, Roma Konecky, John Pyles, Shawn Walls, Vincent Destefino, Wei Wang, and R. Mark Richardson. Dynamic encoding of face information in the human fusiform gyrus. *Nature Communications*. 5:5672 (2014), doi: `10.1038/ncomms6672`

Peer-reviewed conference proceedings

2014 Hassan Albalawi, **Yuanning Li**, and Xin Li. Computer-aided design of machine learning algorithm: training fixed-point classifier for on-chip low-power implementation. *Proceedings of the 51st ACM/EDAC/IEEE Design Automation Conference (DAC)*. 2014. doi: `10.1145/2593069.2593110` (acceptance rate: 174/787 = 22.1%)

Conferences and Workshops

Contributed talks

2018 **Yuanning Li**, Michael Ward, R. Mark Richardson, Max G G'Sell and Avniel Singh Ghuman, Endogenous pre-stimulus activity modulates category tuning in ventral temporal cortex and influences behavior, *48th Annual Meeting of Society for Neuroscience (SfN 2018)*, San Diego, CA, 2018

2018 **Yuanning Li**, Michael Ward, R. Mark Richardson, Max G G'Sell and Avniel Singh Ghuman, Endogenous oscillatory activity modulates category tuning in ventral temporal cortex, *Vision Sciences Society Eighteenth Annual Meeting (VSS 2018)*, St. Pete Beach, FL, 2018.

2018 Matthew Boring, Edward Silson, **Yuanning Li**, Michael Ward, Christopher Baker, R. Mark Richardson, and Avniel Singh Ghuman, Interdigitation of words and faces in the ventral visual stream: reevaluating the spatial organization of category selective cortex using intracranial EEG, *Vision Sciences Society Eighteenth Annual Meeting (VSS 2018)*, St. Pete Beach, FL, 2018. (Talk given by Matthew Boring)

2016 **Yuanning Li**, Michael Ward, Witold Lipski, R. Mark Richardson, and Avniel Singh Ghuman, Neurodynamics of expression coding in the core face network, *46th Annual Meeting of Society for Neuroscience (SfN 2016)*, San Diego, CA, 2016

Poster presentations

2018 **Yuanning Li**, Michael Ward, R. Mark Richardson, Max G G'Sell and Avniel Singh Ghuman, Endogenous pre-stimulus activity modulates category tuning in ventral temporal cortex and influences perceptual behavior, *2018 Conference on Cognitive Computational Neuroscience*, Philadelphia, PA, 2018

2017 **Yuanning Li**, Michael Ward, Witold Lipski, R. Mark Richardson, and Avniel Singh Ghuman, Neurodynamics of expression coding in the core face network, *Vision Sciences Society Seventeenth Annual Meeting (VSS 2017)*, St. Pete Beach, FL, 2017. doi: 10.1167/17.10.821

2016 **Yuanning Li**, and Avniel Singh Ghuman. Distributed information processing across OFA and FFA represents individual face identities, *Vision Sciences Society Sixteenth Annual Meeting (VSS 2016)*, St. Pete Beach, FL, 2016. doi: 10.1167/16.12.1232

2016 Avniel Singh Ghuman, **Yuanning Li**, Elizabeth Hirshorn, Julie Fiez, and R. Mark Richardson. Information processing dynamics in human category-selective fusiform gyrus, *Vision Sciences Society Sixteenth Annual Meeting (VSS 2016)*, St. Pete Beach, FL, 2016. doi: 10.1167/16.12.254

2015 **Yuanning Li** and Avniel Singh Ghuman. Multi-connection pattern analysis (MCPA): multivariate discriminant analysis of functional connectivity between neural populations, *45th Annual Meeting of Society for Neuroscience (SfN 2015)*, Chicago, IL, 2015

2015 Elissa Aminoff, **Yuanning Li**, John Pyles, Michael Ward, Gena Ghearing, R. Mark Richardson, Avniel Singh Ghuman. Stimulating Associations, *45th Annual Meeting of Society for Neuroscience (SfN 2015)*, Chicago, IL, 2015

2015 **Yuanning Li**, Elizabeth Hirshorn, Michael Ward, Roma Konecky, Ellyanna Kessler, Breana Gallagher, R. Mark Richardson, Julie Fiez, and Avniel Singh Ghuman. Decoding the temporal dynamics of left mid-fusiform gyrus activity during word reading, *Seventh International Workshop on Statistical Analysis of Neuronal Data (SAND7)*, Pittsburgh, PA, 2015

2014 **Yuanning Li**, Nicolas Brunet, Ellyanna Kessler and Avniel Singh Ghuman. Spatiotemporal analysis of human face individuation. *19th International Conference on Biomagnetism (BIOMAG)*, Halifax, Canada, 2014

Invited Talks

2017 Young Scholar Seminar Series, East China Normal University, Shanghai, China

Journal Reviewer

Ad-hoc Reviewer IEEE Transactions on Neural Systems & Rehabilitation Engineering

Teaching

Spring 2018 **Teaching Assistant**, *Carnegie Mellon University*, Pittsburgh, PA.
10-708 Probabilistic Graphical Models (Machine Learning Ph.D. core course)

Summer 2016 **Teaching Assistant**, *Center for the Neural Basis of Cognition, CMU-Pitt*.
Summer course for the undergraduate program in neural computation (uPNC)

Spring 2013 **Teaching Assistant**, *Carnegie Mellon University*, Pittsburgh, PA.
18-202 Mathematical Foundations of Electrical Engineering (ECE undergraduate course)

Programming Skills

Proficient in MATLAB, Python, LaTeX

Capable in C, C++, Java, bash

References

Avniel Singh Ghuman, *ghumana@upmc.edu*.
Associate Professor, University of Pittsburgh

Max G. G'Sell, *mgsell@andrew.cmu.edu*.
Assistant Professor, Carnegie Mellon University

R. Mark Richardson, *richardsonrm@upmc.edu*.
Associate Professor, University of Pittsburgh

Robert E. Kass, *kass@stat.cmu.edu*.
Professor, Carnegie Mellon University

Julie A. Fiez, *fiez@pitt.edu*.
Professor, University of Pittsburgh

Byron M. Yu, *byronyu@cmu.edu*.
Associate Professor, Carnegie Mellon University