




Srikanth Ryali

Senior Research Scientist, Psych/Major Laboratories and Clinical & Translational Neurosciences Incubator

 NIH Biosketch available Online

Bio

EDUCATION AND CERTIFICATIONS

- PhD, Indian Institute of Science , Electrical Engineering (2005)
- M S, Indian Institute of Science , Electrical Engineering (1998)
- BS, Osmania University , Electrical Engineering (1996)

LINKS

- SCSNL: http://stanford.edu/group/scsnl/cgi-bin/drupal_scsnl/

Publications

PUBLICATIONS

- **Deep learning models reveal replicable, generalizable, and behaviorally relevant sex differences in human functional brain organization.** *Proceedings of the National Academy of Sciences of the United States of America*
Ryali, S., Zhang, Y., de Los Angeles, C., Supekar, K., Menon, V.
2024; 121 (9): e2310012121
- **Robust, Generalizable, and Interpretable Artificial Intelligence-Derived Brain Fingerprints of Autism and Social Communication Symptom Severity.** *Biological psychiatry*
Supekar, K., Ryali, S., Yuan, R., Kumar, D., de Los Angeles, C., Menon, V.
2022
- **Deep learning identifies robust gender differences in functional brain organization and their dissociable links to clinical symptoms in autism.** *The British journal of psychiatry : the journal of mental science*
Supekar, K., de Los Angeles, C., Ryali, S., Cao, K., Ma, T., Menon, V.
2022: 1-8
- **Developmental Maturation of Causal Signaling Hubs in Voluntary Control of Saccades and Their Functional Controllability.** *Cerebral cortex (New York, N.Y. : 1991)*
Zhang, Y., Ryali, S., Cai, W., Supekar, K., Pasumarthy, R., Padmanabhan, A., Luna, B., Menon, V.
1800
- **Dynamic causal brain circuits during working memory and their functional controllability.** *Nature communications*
Cai, W., Ryali, S., Pasumarthy, R., Talasila, V., Menon, V.
2021; 12 (1): 3314
- **Aberrant dynamics of cognitive control and motor circuits predict distinct restricted and repetitive behaviors in children with autism.** *Nature communications*
Supekar, K., Ryali, S., Mistry, P., Menon, V.
2021; 12 (1): 3537

- **Intrinsic functional architecture of the human speech processing network.** *Cortex; a journal devoted to the study of the nervous system and behavior*
Abrams, D. A., Kochalka, J. n., Bhide, S. n., Ryali, S. n., Menon, V. n.
2020; 129: 41–56
- **Uncovering hidden brain state dynamics that regulate performance and decision-making during cognition** *NATURE COMMUNICATIONS*
Taghia, J., Cai, W., Ryali, S., Kochalka, J., Nicholas, J., Chen, T., Menon, V.
2018; 9
- **Bayesian Switching Factor Analysis for Estimating Time-varying Functional Connectivity in fMRI.** *NeuroImage*
Taghia, J., Ryali, S., Chen, T., Supekar, K., Cai, W., Menon, V.
2017
- **Temporal Dynamics and Developmental Maturation of Salience, Default and Central-Executive Network Interactions Revealed by Variational Bayes Hidden Markov Modeling** *PLOS COMPUTATIONAL BIOLOGY*
Ryali, S., Supekar, K., Chen, T., Kochalka, J., Cai, W., Nicholas, J., Padmanabhan, A., Menon, V.
2016; 12 (12)
- **Multivariate dynamical systems-based estimation of causal brain interactions in fMRI: Group-level validation using benchmark data, neurophysiological models and human connectome project data** *JOURNAL OF NEUROSCIENCE METHODS*
Ryali, S., Chen, T., Supekar, K., Tu, T., Kochalka, J., Cai, W., Menon, V.
2016; 268: 142-153
- **Distinct Global Brain Dynamics and Spatiotemporal Organization of the Salience Network** *PLOS BIOLOGY*
Chen, T., Cai, W., Ryali, S., Supekar, K., Menon, V.
2016; 14 (6)
- **Neural circuits underlying mother's voice perception predict social communication abilities in children** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Abrams, D. A., Chen, T., Odrizola, P., Cheng, K. M., Baker, A. E., Padmanabhan, A., Ryali, S., Kochalka, J., Feinstein, C., Menon, V.
2016; 113 (22): 6295-6300
- **Combining optogenetic stimulation and fMRI to validate a multivariate dynamical systems model for estimating causal brain interactions** *NEUROIMAGE*
Ryali, S., Shih, Y. I., Chen, T., Kochalka, J., Albaugh, D., Fang, Z., Supekar, K., Lee, J. H., Menon, V.
2016; 132: 398-405
- **Development and validation of consensus clustering-based framework for brain segmentation using resting fMRI.** *Journal of neuroscience methods*
Ryali, S., Chen, T., Padmanabhan, A., Cai, W., Menon, V.
2015; 240: 128-140
- **Role of the anterior insular cortex in integrative causal signaling during multisensory auditory-visual attention.** *European journal of neuroscience*
Chen, T., Michels, L., Supekar, K., Kochalka, J., Ryali, S., Menon, V.
2015; 41 (2): 264-274
- **Dissociable roles of right inferior frontal cortex and anterior insula in inhibitory control: evidence from intrinsic and task-related functional parcellation, connectivity, and response profile analyses across multiple datasets.** *journal of neuroscience*
Cai, W., Ryali, S., Chen, T., Li, C. R., Menon, V.
2014; 34 (44): 14652-14667
- **Estimation of resting-state functional connectivity using random subspace based partial correlation: A novel method for reducing global artifacts.** *NeuroImage*
Chen, T., Ryali, S., Qin, S., Menon, V.
2013; 82: 87-100
- **Salience Network-Based Classification and Prediction of Symptom Severity in Children With Autism** *JAMA PSYCHIATRY*
Uddin, L. Q., Supekar, K., Lynch, C. J., Khouzam, A., Phillips, J., Feinstein, C., Ryali, S., Menon, V.
2013; 70 (8): 869-879

- **Underconnectivity between voice-selective cortex and reward circuitry in children with autism** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Abrams, D. A., Lynch, C. J., Cheng, K. M., Phillips, J., Supekar, K., Ryali, S., Uddin, L. Q., Menon, V.
2013; 110 (29): 12060-12065
- **Multivariate Activation and Connectivity Patterns Discriminate Speech Intelligibility in Wernicke's, Broca's, and Geschwind's Areas** *CEREBRAL CORTEX*
Abrams, D. A., Ryali, S., Chen, T., Balaban, E., Levitin, D. J., Menon, V.
2013; 23 (7): 1703-1714
- **Inter-subject synchronization of brain responses during natural music listening.** *European journal of neuroscience*
Abrams, D. A., Ryali, S., Chen, T., Chordia, P., Khouzam, A., Levitin, D. J., Menon, V.
2013; 37 (9): 1458-1469
- **A parcellation scheme based on von Mises-Fisher distributions and Markov random fields for segmenting brain regions using resting-state fMRI** *NEUROIMAGE*
Ryali, S., Chen, T., Supekar, K., Menon, V.
2013; 65: 83-96
- **Hippocampal-Prefrontal Engagement and Dynamic Causal Interactions in the Maturation of Children's Fact Retrieval** *JOURNAL OF COGNITIVE NEUROSCIENCE*
Cho, S., Metcalfe, A. W., Young, C. B., Ryali, S., Geary, D. C., Menon, V.
2012; 24 (9): 1849-1866
- **Estimation of functional connectivity in fMRI data using stability selection-based sparse partial correlation with elastic net penalty** *NEUROIMAGE*
Ryali, S., Chen, T., Supekar, K., Menon, V.
2012; 59 (4): 3852-3861
- **Decoding Subject-Driven Cognitive States with Whole-Brain Connectivity Patterns** *CEREBRAL CORTEX*
SHIRER, W. R., RYALI, S., RYKHEVSKAIA, E., MENON, V., GREICIUS, M. D.
2012; 22 (1): 158-165
- **Dynamic Reconfiguration of Structural and Functional Connectivity Across Core Neurocognitive Brain Networks with Development** *JOURNAL OF NEUROSCIENCE*
Uddin, L. Q., Supekar, K. S., Ryali, S., Menon, V.
2011; 31 (50): 18578-18589
- **How does a child solve 7+8? Decoding brain activity patterns associated with counting and retrieval strategies** *DEVELOPMENTAL SCIENCE*
Cho, S., Ryali, S., Geary, D. C., Menon, V.
2011; 14 (5): 989-1001
- **Decoding Temporal Structure in Music and Speech Relies on Shared Brain Resources but Elicits Different Fine-Scale Spatial Patterns** *CEREBRAL CORTEX*
Abrams, D. A., Bhatara, A., Ryali, S., Balaban, E., Levitin, D. J., Menon, V.
2011; 21 (7): 1507-1518
- **Multivariate dynamical systems models for estimating causal interactions in fMRI** *NEUROIMAGE*
Ryali, S., Supekar, K., Chen, T., Menon, V.
2011; 54 (2): 807-823
- **Dynamic reconfiguration of structural and functional connectivity across core neurocognitive brain networks with development.** *Journal of Neuroscience*
Lucina Uddin, K., Srikanth Ryali, Vinod Menon
2011
- **Discriminatory Learning based Performance Monitoring of Batch Processes** *American Control Conference, USA*
Yelchuru, R., Srikanth Ryali, Patel, Shailesh, Gudi, Ravindra
2011

- **Sparse logistic regression for whole-brain classification of fMRI data** *NEUROIMAGE*
Ryali, S., Supekar, K., Abrams, D. A., Menon, V.
2010; 51 (2): 752-764
- **Development, validation, and comparison of ICA-based gradient artifact reduction algorithms for simultaneous EEG-spiral in/out and echo-planar fMRI recordings** *NEUROIMAGE*
Ryali, S., Glover, G. H., Chang, C., Menon, V.
2009; 48 (2): 348-361
- **Aging and the Interaction of Sensory Cortical Function and Structure** *HUMAN BRAIN MAPPING*
Peiffer, A. M., Hugenschmidt, C. E., Maldjian, J. A., Casanova, R., Srikanth, R., Hayasaka, S., Burdette, J. H., Kraft, R. A., Laurienti, P. J.
2009; 30 (1): 228-240
- **The impact of temporal regularization on estimates of the BOLD hemodynamic response function: A comparative analysis** *NEUROIMAGE*
Casanova, R., Ryali, S., Serences, J., Yang, L., Kraft, R., Laurienti, P. J., Maldjian, J. A.
2008; 40 (4): 1606-1618
- **Prediction of Batch Quality Indices Using Functional Space Approximation and Partial Least Squares** *American Control Conference, USA*.
Yelchuru, R., Patel, Shailesh, Srikanth Ryali, Gudi, Ravindra
2008
- **Biological parametric mapping: A statistical toolbox for multimodality brain image analysis** *NEUROIMAGE*
Casanova, R., Srikanth, R., Baer, A., Laurienti, P. J., Burdett, J. H., Hayasaka, S., Flowers, L., Wood, F., Maldjian, J. A.
2007; 34 (1): 137-143
- **Estimation of false discovery rates for wavelet-denoised statistical parametric maps** *NEUROIMAGE*
Srikanth, R., Casanova, R., Laurienti, P. J., Peiffer, A. M., Maldjian, J. A.
2006; 33 (1): 72-84
- **Wavelet-based estimation of hemodynamic response function from fMRI data** *INTERNATIONAL JOURNAL OF NEURAL SYSTEMS*
Srikanth, R., Ramakrishnan, A. G.
2006; 16 (2): 125-138
- **Polarization-rich continuous wave direct imaging: modeling and visualization** *Applied Optics*
R. S. Umesh, A. G. Ramakrishnan, R. Srikanth, R. Hema, S. Divya
2006; 45 (18): 4344-4354
- **Contextual encoding in uniform and adaptive mesh-based lossless compression of MR images** *IEEE TRANSACTIONS ON MEDICAL IMAGING*
Srikanth, R., Ramakrishnan, A. G.
2005; 24 (9): 1199-1206
- **Region of Interest Coding of 2-D and 3-D Magnetic Resonance Images** *ICVGIP*
Srikanth Ryali, A.G. Ramakrishnan
2004
- **Shape Adaptive Integer Wavelet Transform based coding scheme for 2-D/3-D MR Images** *Data Compression Conference, Snowbird, Utah, USA*,
Abhishek Mehrotra, Srikanth Ryali, A.G. Ramakrishnan
2004
- **Modeling and on-line recognition of PD signal buried in excessive noise** *Signal processing*
Shetty PK, Srikanth R, Ramu TS
2004; 84 (12): 2389-2401
- **Wavelet-based Coding of 2-D and 3-D coding of MR images** *IEEE-TENCON*
Srikanth Ryali, A.G. Ramakrishnan
2003
- **Parameter Estimation of HRF and Classification of fMRI data using Probabilistic PCA Modeling** *ICAPR*

Srikanth Ryali, A.G.Ramakrishnan
2003

- **Model based Bayesian approach for MR Image Segmentation** *ICAPR*
Niranjan Joshi, Srikanth Ryali, A.G.Ramakrishnan
2003
- **MR Image Coding using Content-based Mesh and Context"**, *International Symposium on Signal Processing and Applications*
Srikanth Ryali, A.G. Ramakrishnan
2003
- **Parameter Estimation of HRF and Classification of fMRI data using Probabilistic PCA Modeling** *ICAPR*
Srikanth Ryali, A.G.Ramakrishnan
2003
- **Multivariate searchlight classification of structural MRI in children and adolescents with autism.** *Biological Psychiatry*
Uddin, L. Q, Menon, V., Young, C. B., Ryali, S., Chen, T., Khouzam, A., Minshew, N. J. & Hardan