Stanford

Kaustubh Supekar

Clinical Associate Professor, Psychiatry and Behavioral Sciences - Child & Adolescent Psychiatry and Child Development

Bio

ACADEMIC APPOINTMENTS

- Clinical Associate Professor, Psychiatry and Behavioral Sciences - Child & Adolescent Psychiatry and Child Development
- Member, Wu Tsai Human Performance Alliance
- Member, Maternal & Child Health Research Institute (MCHRI)
- Member, Wu Tsai Neurosciences Institute

PROFESSIONAL EDUCATION

- Ph.D., Stanford University School of Medicine
- Entrepreneurship, Stanford Graduate School of Business

LINKS

- Supekar Lab: https://med.stanford.edu/supekar-lab.html

Teaching

COURSES

2024-25

- Artificial Intelligence in Mental Health: PSYC 63Q (Spr)

2023-24

- Artificial Intelligence in Mental Health: PSYC 63Q (Spr)

2022-23

- Artificial Intelligence in Mental Health: PSYC 63Q (Spr)

Publications

PUBLICATIONS

- **Robust and replicable functional brain signatures of 22q11.2 deletion syndrome and associated psychosis: a deep neural network-based multi-cohort study.** *Molecular psychiatry*
  Supekar, K., de Los Angeles, C., Ryali, S., Kushan, L., Schleifer, C., Repetto, G., Crossley, N. A., Simon, T., Bearden, C. E., Menon, V.
  2024
- **Integrative Brain Network and Salience Models of Psychopathology and Cognitive Dysfunction in Schizophrenia.** *Biological psychiatry*
  Menon, V., Palaniyappan, L., Supekar, K.

2022

- **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
- **Aberrant dynamics of cognitive control and motor circuits predict distinct restricted and repetitive behaviors in children with autism.** *Nature communications*
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- **Dysregulated Brain Dynamics in a Triple-Network Saliency Model of Schizophrenia and Its Relation to Psychosis.** *Biological psychiatry*
  Supekar, K., Cai, W., Krishnadas, R., Palaniyappan, L., Menon, V.
  2018
- **Deficits in mesolimbic reward pathway underlie social interaction impairments in children with autism.** *Brain : a journal of neurology*
  Supekar, K., Kochalka, J., Schaer, M., Wakeman, H., Qin, S., Padmanabhan, A., Menon, V.
  2018
- **Sex differences in structural organization of motor systems and their dissociable links with repetitive/restricted behaviors in children with autism** *MOLECULAR AUTISM*
  Supekar, K., Menon, V.
  2015; 6
- **Brain hyperconnectivity in children with autism and its links to social deficits.** *Cell reports*
  Supekar, K., Uddin, L. Q., Khouzam, A., Phillips, J., Gaillard, W. D., Kenworthy, L. E., Yerys, B. E., Vaidya, C. J., Menon, V.
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- **Developmental Maturation of Dynamic Causal Control Signals in Higher-Order Cognition: A Neurocognitive Network Model** *PLOS COMPUTATIONAL BIOLOGY*
  Supekar, K., Menon, V.
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- **Dynamic reconfiguration of structural and functional connectivity across core neurocognitive brain networks with development.** *Journal of Neuroscience*
  Supekar,, K., Lucina Q., U., Ryali, S., Vinod , M.
  2011; 31 (50): 18578-89
- **Development of functional and structural connectivity within the default mode network in young children** *NEUROIMAGE*
  Supekar, K., Uddin, L. Q., Prater, K., Amin, H., Greicius, M. D., Menon, V.
  2010; 52 (1): 290-301
- **Development of Large-Scale Functional Brain Networks in Children** *PLOS BIOLOGY*
  Supekar, K., Musen, M., Menon, V.
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- **Network analysis of intrinsic functional brain connectivity in Alzheimer's disease** *PLOS COMPUTATIONAL BIOLOGY*
  Supekar, K., Menon, V., Rubin, D., Musen, M., Greicius, M. D.
  2008; 4 (6)
- **Glutamate, Contextual Insensitivity, and Disorganized Speech in First-Episode Schizophrenia: A 7T Magnetic Resonance Spectroscopy Study.** *Biological psychiatry global open science*
  Wang, Y. L., Sharpe, V., Mackinley, M., Kuperberg, G. R., Supekar, K., Theberge, J., Palaniyappan, L.
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- **Artificial Intelligence in Obsessive-Compulsive Disorder: A Systematic Review.** *Current treatment options in psychiatry*
  Kim, J., Pacheco, J. P., Golden, A., Aboujaoude, E., van Roessel, P., Gandhi, A., Mukunda, P., Avanesyan, T., Xue, H., Adeli, E., Kim, J. P., Saggar, M., Stirman, et al
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- **Reply to Lockhart et al.: Advancing the understanding of sex differences in functional brain organization with innovative AI tools.** *Proceedings of the National Academy of Sciences of the United States of America*
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- **Neuroanatomical, transcriptomic, and molecular correlates of math ability and their prognostic value for predicting learning outcomes.** *Science advances*
  Liu, J., Supekar, K., El-Said, D., de Los Angeles, C., Zhang, Y., Chang, H., Menon, V.
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  Ryali, S., Zhang, Y., de Los Angeles, C., Supekar, K., Menon, V.
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- **The Effects of Methylphenidate on Spontaneous Fluctuations in Reward and Cognitive Control Networks in Children With Attention-Deficit/Hyperactivity Disorder -Randomized Controlled Studies in Two Independent Cohorts**
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- **Methylphenidate Enhances Spontaneous Fluctuations in Reward and Cognitive Control Networks in Children With Attention-Deficit/Hyperactivity Disorder.** *Biological psychiatry. Cognitive neuroscience and neuroimaging*
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- **Methylphenidate remediates aberrant brain network dynamics in children with attention-deficit/hyperactivity disorder: a randomized controlled trial.** *NeuroImage*
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- **Methylphenidate Enhances Spontaneous Fluctuations in Reward and Cognitive Control Networks in Children With Attention-Deficit/Hyperactivity Disorder: A Randomized Control Trial**
  Mizuno, Y., Cai, W., Supekar, K., Makita, K., Takiguchi, S., Tomoda, A., Menon, V.
  ELSEVIER SCIENCE INC.2022: S110

- **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.
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- **mTOR-related synaptic pathology causes autism spectrum disorder-associated functional hyperconnectivity.** *Nature communications*
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- **Parietal hyper-connectivity, aberrant brain organization, and circuit-based biomarkers in children with mathematical disabilities** *DEVELOPMENTAL SCIENCE*
  Jolles, D., Ashkenazi, S., Kochalka, J., Evans, T., Richardson, J., Rosenberg-Lee, M., Zhao, H., Supekar, K., Chen, T., Menon, V.
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- **Distinct Global Brain Dynamics and Spatiotemporal Organization of the Salience Network** *PLOS BIOLOGY*
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- **Combining optogenetic stimulation and fMRI to validate a multivariate dynamical systems model for estimating causal brain interactions** *NEUROIMAGE*
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- **Plasticity of left perisylvian white-matter tracts is associated with individual differences in math learning.** *Brain structure & function*
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  Supekar, K., Iuculano, T., Chen, L., Menon, V.
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- **Sex differences in cortical volume and gyrification in autism** *MOLECULAR AUTISM*
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- **Sex differences in cortical volume and gyrification in autism.** *Molecular autism*
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