

Harang Ju

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Positions

2022 – present **Postdoctoral associate** | web3 | MIT Sloan School of Management
2017 – 2022 **Ph.D. candidate** | Neuroscience | University of Pennsylvania
2015 – 2017 **Research assistant** | Systems Neurodynamics Lab | University of Virginia
Summer 2016 **Research assistant** | Center for Brain Immunology & Glia | University of Virginia
2013 – 2014 **Research assistant** | Radiation Oncology | University of Virginia
Summer 2013 **Intern** | iOS Development | WillowTree Inc.
Summer 2010 **Intern** | Technology Center | National Radio Astronomy Observatory

Education

University of Pennsylvania August 2017 – August 2022
Ph.D. Neuroscience
Advisor: Dr. Danielle Bassett

University of Virginia August 2012 – May 2016
B.S. Computer Science
B.A. Cognitive Science

Awards

2019 Travel award to attend Sackler Colloquia: Brain Produces Mind by Modeling
2018 Fine Science Tools travel award to attend Society for Neuroscience conference
2016 Rader Award for Undergraduate Research for Thesis Project, UVA
2012 Rodman scholar (top 5% of prospective engineering students), UVA
2012 QuestBridge finalist

Publications

Shubhankar Patankar, Dale Zhou, Christopher W Lynn, Jason Z Kim, Mathieu Ouellet, **Harang Ju**, Perry Zurn, David M Lydon-Staley, Dani S Bassett. Curiosity as filling, compressing, and reconfiguring knowledge networks. *arXiv:2204.01182 [q-bio.NC]* (2022) [arXiv](#)

Harang Ju, Dale Zhou, Ann S. Blevins, David M. Lydon-Staley, Judith Kaplan, Julio R. Tuma, Danielle S. Bassett. The network structure of scientific revolutions. *arXiv:2010.08381 [physics]* (2020) [arXiv](#)

Harang Ju, Jason Z Kim, Danielle S. Bassett. Network structure of cascading neural systems predicts stimulus propagation and recovery. *Journal of Neural Engineering* (2020) [article](#)

Harang Ju, Danielle S. Bassett. Dynamic representations in networked neural systems. *Nature Neuroscience* (2020) [article](#)

Evelyn Tang, **Harang Ju**, Graham L Baum, David R Roalf, Theodore D Satterthwaite, Fabio Pasqualetti, Danielle S Bassett. Control of brain network dynamics across diverse scales of space and time. *Physical Review E* (2020) [article](#)

Pragya Srivastava, Erfan Nozari, Jason Z. Kim, **Harang Ju**, Dale Zhou, Cassiano Becker, Fabio Pasqualetti, Danielle S. Bassett. Models of communication and control for brain networks: distinctions, convergence, and future outlook (2020) [article](#)

Harang Ju, Costa M. Colbert, William B Levy. Limited synapse overproduction can speed development but sometimes with long-term energy and discrimination penalties. *PLOS Computational Biology* (2017) [article](#)

Harang Ju, Siyong Kim, Paul Read, Daniel Trifiletti, Andrew Harrell, Bruce Libby, Taeho Kim. Development of a novel remote-controlled and self-contained audiovisual- aided interactive system for immobilizing claustrophobic patients. *Journal of Applied Clinical Medical Physics* (2015) [article](#)

Invited Talks

November 2020 *The network structure of scientific revolutions*. Center for Science of Science and Innovation. Kellogg School of Management, Northwestern University.

Conferences

December 2022 Talk, Crypto-Marketing Conference. Columbia Business School, New York.
March 2021 Poster, American Physical Society March Meeting. Virtual.
September 2019 Poster, Cognitive Computational Neuroscience. Berlin, Germany.
May 2019 Poster, Context and Episodic memory Symposium. Philadelphia, PA.
May 2019 Talk & poster, Sackler Colloquia: Brain Produces Mind by Modeling. Irvine, CA.
November 2018 Poster, Society for Neuroscience. San Diego, CA.

Teaching

Fall 2022 **Mentor** | Analytics Lab – Action Learning seminar | MIT Sloan
Fall 2020 **Guest Lecture** | BE566: Network Neuroscience | University of Pennsylvania |
Case Study: The network structure of scientific revolutions
Fall 2019 **Teaching Assistant** | BBB249: Cognitive Neuroscience | University of Pennsylvania
Fall 2019 **Guest Lecture** | BE566: Network Neuroscience | University of Pennsylvania |
Case Study: Network Structure and Dynamics in Cascading Neural Systems
2016 – 2017 **Teaching Assistant** | BME3636: Neural Network Models | University of Virginia

Patents

Taeho Kim, **Harang Ju**, Siyong Kim. Intrafractional motion reduction system using audiovisual-aided interactive guidance and related methods thereof. US 2017/0231530 A1, United States Patent and Trademark Office, 17 August 2017.

Consulting

Spring 2019 Biotech Consulting Project | Penn Biomedical Group Healthcare Consulting

Skills

Programming: python, pandas, plotly, dash, MATLAB, web (Vue), java, bash, iOS, C++, git

Languages: English (native), Korean (fluent)

Office: Excel, VBA, Alteryx Designer Core certified

Last updated: 2022.12.06