JUNGSUN YOO

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EDUCATION

2020 - **Ph.D. University of California, Irvine**
Major in Cognitive Sciences with a concentration in Cognitive Neuroscience
Advisor: Dr. Aaron Bornstein

2017 **M.Sc. Free University of Berlin, Germany**
Major in Social, Cognitive, and Affective Neuroscience (GPA of 3.8 /4.0)

2015 **B.A. Sungkyunkwan University, Republic of Korea**
Double Major in Philosophy and Psychology (GPA of 3.87 / 4.5; above 92%)

PUBLICATIONS

Peer-reviewed journal articles

Yoo J, Chrastil ER, Bornstein AM (2024). Cognitive graphs: Representational substrates for planning. *Decision*.

Schultz H, ***Yoo J***, Meshi D, Heekeren HR (2022). Category-specific item encoding in the medial temporal lobe and beyond: The role of reward. *Learning and Memory 29 (10), 379-389.*

Yoo J, Jun T, Kim Y (2021). xECGNet: Fine-tuning attention map within convolutional neural network to improve detection and explainability of concurrent cardiac arrhythmias. *Computer Methods and Programs in Biomedicine, 208, 106281*.

Ahn I, Na W, Kwon O, Yang D, Park G, Gwon H, Kang H, Jeong Y, ***Yoo J***, Kim Y, Jun T, Kim Y (2021). CardioNet: a manually curated database for artificial intelligence-based research on cardiovascular diseases. *BMC medical informatics and decision making 21 (2021): 1-15.*

Yoo J, Min S, Lee S, Han S (2021). Neural correlates of episodic memory modulated by temporally delayed rewards. *PLoS ONE 16(4): e0249290*.

Peer-reviewed articles in conference proceedings

Yoo J, Zhou D, Bornstein AM (2024). Latent cause inference as efficient and flexible learning rule for cognitive graphs. *Cognitive Computational Neuroscience (CCN) 2024*. [paper]

Yoo J, Bornstein AM (2022). Two-stage task with increased state space complexity to assess online planning. *Proceedings of the 5th Multidisciplinary Conference on Reinforcement Learning and Decision Making (RLDM 2022).*

Preprints

Yoo J, Bornstein AM. Temporal dynamics of model-based control reveal arbitration between multiple task representations. [paper]

PATENT

Yoo J, Jun T, Kim Y. Method and apparatus of explainable multi electrocardiogram arrhythmia diagnosis. Republic of Korea, Dec. 2020 (Application No. 10-2020-0166666)

FELLOWSHIPS AND AWARDS

March 2024 **Indow Fellowship for Research Excellence** ($7,000)
UCI Department of Cognitive Sciences

May 2023 **Upper Bound Talent Bursary**
Alberta Machine Intelligence Institute (Amii)

Jun 2022 **Student Travel Fellowship**
The 5th Multidisciplinary Conference on Reinforcement Learning and Decision Making (RLDM 2022)

May 2022 **AI Week Talent Bursary**
Alberta Machine Intelligence Institute (Amii)

Sep 2020 **Research Fellowship**
UCI School of Social Sciences

Dec 2019 **Best Trainee Award**
Korean Standard Association & Artificial Intelligence Industry Association
Awarded based on performance during a 6-month AI-specialist training program

Dec 2019 **Best Project Award**
Korean Standard Association & Artificial Intelligence Industry Association
Project: Transformer-based multilingual grapheme-to-phoneme conversion (awarded as a team)

Sep 2015 **Pacific Rim Award**
The Pacific Rim Cultural Foundation
Recipient of the 2015 “Friends of the Pacific Rim” Scholarship ($4300)

CONFERENCE PRESENTATIONS

Yoo J, Bornstein AM (2024). Goal-directed control evolves in tandem with multiple task representations. Society for Neuroscience (SfN), Chicago, USA.

Yoo J, Bornstein AM. Humans build configural representations for planning in complex environments. *2023 International Conference on Learning and Memory (LearnMem), Huntington Beach, CA, USA.*

Yoo J, Bornstein AM. Increased state-space complexity encourages online planning in the two-stage task. *2022 Center for the Neurobiology of Learning and Memory (CNLM) Spring Conference, University of California, Irvine, CA, USA.*

Yoo J, Bornstein AM. Task complexity and experience dictate the use of online, versus offline, planning in humans. *Society for Neuroeconomics 2021 Annual Conference (virtual).*

Yoo J, Schultz H, Meshi D, Han S, Heekeren HR. Differential modulation of reward on memory encoding for objects and scenes is reflected in functional connectivity patterns. *Society for Neuroscience 2018 Annual Conference, San Diego, USA.*

Schultz H, ***Yoo J***, Meshi D, Heekeren HR. Reward modulates memory encoding for objects and scenes in the medial temporal lobe. *Society for Neuroscience 2017 Annual Conference, Washington, DC, USA.*

Shin M, Jung Y, ***Yoo J***. Effects of LBS on Psychological Distance in CMC. *International Communication Association 2015 Annual Conference, Puerto Rico.*

Yoo J, Maeng M, H Chae. The study of how visual aesthetics in SNS affects user's emotion and usability. *Oral presentation at The HCI Society of Korea (2013), Seoul, Republic of Korea*

Jeong W, ***Yoo J***, Park H, Cho K. Development and Evaluation of Gesture Interface Based Presentation Program Using Kinect. *Poster presentation at The HCI Society of Korea (2012), Seoul, Republic of Korea*

EMPLOYMENT

Jan 2021 - **Teaching assistant (TA)**
School of Social Sciences, University of California, Irvine

Jan 2020 - **AI Researcher**
Aug 2020 Asan Medical Center, Republic of Korea

Nov 2017 - **Research Scientist**
Dec 2018 Department of Psychology, Yonsei University

Jan 2017 - **Max Planck Institute for Human Development**
Oct, 2017 Research assistant

TEACHING

Creativity (Prof. John Hagedorn; Psych129B)
Taught as a TA in Fall 2023 at UCI

History of Psychology (Prof. Ted Wright; Psych120H)
Taught as a TA in Spring 2022 at UCI

Research Methods in Psychology (Prof. Christine Lofgren; Psych112M)
Taught as a TA in Fall 2021 at UCI

Psychology Fundamentals (Prof. Barbara Sarnecka; Psych9B)
Taught as a TA in Spring 2021 at UCI

Matlab Programming (Prof. Mark Steyvers; Psych114M)
Taught as a TA in Winter 2021 & Winter 2022 at UCI

INVITED TALKS

Sep 2024 Niv Lab, Princeton University
Sep 2024 Collins Lab, University of California, Berkeley
Jul 2024 Burgess Lab, University College London

MEMBERSHIPS AND SERVICE

Department Colloquium Committee Member (2023-2024)
Invited speakers from all over the world to give virtual or in-person talks to the department. Scheduled meetings for the speaker with department faculty and graduate students. Created and hosted panels and student flash talks with speakers.

UKC 2021 (34th US-Korea Conference on Science, Technology, and Entrepreneurship)
Participated in UKC 2021 as a student volunteer.

AD HOC REVIEWER

Journal
Communications Psychology (code reviewer)

SKILLS

Programming
Proficient: Python, Matlab, *Intermediate:* C, Javascript, R

MRI operation
Passed the MRI safety training at the Center for Cognitive Neuroscience Berlin (CCNB) in 2017

AI of Things (AIoT) Planning Expert
License acquired in 2019 (license number: AIIA-003-010)

Language
Native: Korean, *Fluent:* English (iBT TOEFL score: 116)

WRITING FOR A GENERAL AUDIENCE

Jul 2016 "On Determining whom to Kill: the Challenge of Moral Decision Making", blog post on Brainy Sundays
Jan 2017 "Will Neurocriminology make Minority Report Real?", blog post on Brainy Sundays: