Jonghyun Lee

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Research Interests

- Episodic Memory Contextual Process
- Large Scale Brain Connectivity Network
- Protocol Optimization for EPI Data Acquisition
- Cognitive Enhancement Using tES
- Multimodal Imaging Methods

Education

Yonsei University Seoul, Korea
B.A. in Korean Language & Literature, Psychology (Double major); GPA: 4.00/4.30; (Class Rank: 1/66) Aug 2017
Honors and Awards: Honors, Spring & Fall Semesters, 2015

Yonsei University Seoul, Korea
Graduate Program in Cognitive Science Master's Course; GPA: 4.18/4.30 Sep 2017 - Present

Work Experience

Military Service
Completed Military Service as Private, Republic of Korea ARMY Dec 2012 – Sep 2014

Research Experience

Yonsei University, Psychology Department Seoul, Korea
Personality & Social Psychology Lab Mar 2016 – Dec 2016
Undergraduate Research Assistant

- Principal Investigator: Dr. Eunkook Suh

Brain Cognition Lab of Memory and Decision-Making
Undergraduate Research Assistant Jan 2017 – Aug 2017
Master's Degree Student Sep 2017 - Present

- Principal Investigator: Dr. Sanghoon Han
- Thesis: Transcranial direct current stimulation of the hippocampus during episodic memory pattern separation: simultaneous tDCS-fMRI approach
- Collected task based / resting state fMRI data for the development of biomarker for emotional laborers and social anxiety disorder
- Set up high-resolution fMRI protocols and verified the optimal protocol for acquiring hippocampus sub-fields EPI data
- Set up simultaneous fMRI-tDCS protocol to verify the effect of tDCS stimulation using BOLD signal
- Proposed and Implemented WADA alternatives task with fMRI to replace conventional WADA task
- Set up optimal fMRI data acquisition protocol for field-map correction, physiological data denoising
- Various software manual writing out specialized in actual use

Yonsei University, Institute of Convergence Science
ENCOMPASS Team Mar 2018 - Present

- Principal Investigator: Dr. Sang Yup Lee (Affiliated with Devision of Media and Public Relations)
- Developed model to predict human characteristic using social network service personal photos or text

Skills and Qualifications

Relevant programming skills

- MATLAB

DPABI(DPARSF), Spider, BASCO, GraphVar, BrainNet Veiwer, EEGlab

- Python

TensorFlow, Matplotlib, Numpy, Pandas, Scikit-learn, , Selenium, NetworkX, NLTK

- R

Lme4, Stan

- Neuro Imaging Software

SPM8/12, FSL, AFNI, Freesurfer, Nilearn, fMRIPrep, PySurfer, Pycortex

- Statistical Software

SPSS, JASP

- Other Tools

Philips MRI Console, SimNIBS, ASHS, Gephi, Bash Shell Scripting, Unity, Arduino, Raspberry Pi

Relevant coursework taken:

- **Undergraduate School**

Psychology of Cognitive Engineering (A+)**,** Psychology of Learning & Memory (A+), Introduction to Cognitive Neuroscience (A0), Experimental Methodology in Psychology (A0), Cognitive Psychology (A0), Psychological Statistics (B+)

- **Graduate School**

Topics in Cognitive Science (A+), Psychological Science Colloquim (A+), Machine Learning and Its Application (A+), Neuroscience of Memory & Decision-Making Seminar (A+), Memory and Decision-Making Seminar (A+), Cognitive Modeling Seminar (A+), Principles and Applications of Neuroimaging (A+), Neurophysiology (A0), Advanced Computer Vision (A0), Principles of Psychophysiology (A-), Advanced Topics in Pattern Recognition (in the course), Online Data collections and Analysis (audit), Medical Image Processing (audit)

Publications

Published

Ahn, J., Lee, J., Han, J. H., Kang, M. S., & Han, S. (2018). Group analysis data representing the effects of frontopolar transcranial direct current stimulation on the default mode network. *Data in brief*, *20*, 1309-1313.

Nah, Y., Lee, J., & Han, S. (2018). Interactivity within large-scale brain network recruited for retrieval of temporally organized events. *Cognitive Science*, *29*(3), 161-192.

Under Review

Lee, J., Lee, H., Ahn, J., Min, S., Lee, S., & Han, S., Exploring the Optimal high-resolution EPI protocols to decrease susceptibility-related BOLD signal dropout, *American Journal of Neuroradiology,* under review

In Preparation

Lee, J., Park, J., Min, S., Lee, S., & Han, S., Exploring context processing of episodic memory: dissociating backgroud, agent and action based in default mode network, in preparation

Oh, J., Lee, J., Lee, S., & Han, S., Exploring the functional connectivity patterns between hippocampus and amygdala according to arousal evaluation, in preparation

Poster Presentations

Lee, J., Lee, H., Ahn, J., Min, S., Lee, S., & Han, S., Exploring the high-resolution EPI fRMI protocol to reduce susceptibility-related BOLD signal dropout, *OHBM 24th annual meeting*, 2018.06, Singapore.

Min, S., Jun, S., Ahn, J., Lee, J., Park, S., Lee, S., & Han, S., Intrinsic functional connectivity in emotion regulation network is altered in emotional laborers, *Neuroscience 48th annual meeting*, 2018.11, San Diego: USA.

Ahn, J., Jun, S., Lee, S., Min, S., Lee, S., Park, S., & Han, S., Altered Emotional Attention and Brain Functional Connectivity Networks of Emotional Laborers, *Neuroscience 48th annual meeting*, 2018.11, San Diego: USA.