Song, Myeong Seop
sms1313j@gmail.com

EDUCATION
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2016 – 2020   **EPFL (École polytechnique fédérale de Lausanne), Lausanne, Switzerland**
Ph.D. in Neuroscience June. 2020
- Thesis: Flight of mind - Sensorimotor and multisensory embodiment with aviation robotics, flight simulator, and virtual reality

2008 – 2015   **KAIST (Korea Advanced Institute of Science and Technology), Daejeon, Korea**
B.S. in Dept. of Bio and Brain Engineering Feb. 2015
- Graduate with Magna Cum Laude (GPA: 3.72/4.3)
- Second major: Business and Technology Management
- National Science and Engineering Scholarship (2008-2015, $1,524 per semester)

WORK & RESEARCH EXPERIENCES
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2021 – present   **Computational Clinical Science Laboratory**, SNU, Postdoctoral fellow
Supervisor: Prof. Woo-Young Ahn, Computational Clinical Science Laboratory (CCS)
Department of Psychology, Seoul National University (SNU), Seoul, Korea

2016 – 2020   **Laboratory of Cognitive Neuroscience**, EPFL, Doctoral student
Supervisor: Prof. Olaf Blanke, Laboratory of Cognitive Neuroscience (LNCO)
- Inducing out-of-body experience in healthy subjects with virtual reality
- Enhancing embodiment in flight simulation with sensorimotor and multisensory stimulation to improve flight sensation and piloting performance
- Inducing heautoscopy-like perception in healthy subjects with drone
- Teaching assistantship in bachelor's courses on Neuroscience

2016   **Hyprsense**, 2-month software engineer intern
Supervisor: Jungwoon Park, Ph.D. (Co-Founder and CSO, Hypersense, South Korea)
- Using a depth camera, develop a program and which automatically collects data about face landmarks from a real subject

2015   **Center for Cognition and Sociality,** Institute for Basic Science (IBS), Research assistant
Supervisor: Shin Hee-Sup, MD, Ph.D. (IBS, South Korea)
- Inducing social behavior and modeling cooperation with wireless deep brain stimulation
- Investigating the role of the thalamic reticular nucleus in absence seizure of a mouse model with single-unit recording

2013 & 2015   **ybrain (Seoul, Korea),** Researcher
- 7 months Research Internship from 09/2013 to 03/2014
- Simultaneous recording of electroencephalogram (EEG) during transcranial direct-current stimulation (tDCS) in human
- EEG and Behavior analysis with SPSS & MATLAB: Dynamics & connectivity analysis
- Electrocorticography (ECoG) experiment on Beagle with tDCS stimulation

2014   **Shimojo Psychophysics Laboratory,** Caltech, Summer research student
Supervisor: Shinsuke Shimojo, Ph.D. (Computation & Neural Systems, Caltech, USA)
- With EEG hyperscanning and motion tracking, investigating interpersonal neural and behavioral synchronization after social activities
- Leading to sound-induced visual illusion using audio-visual stimulation
- Fund: $4,800 from Dept. of Bio and Brain Engineering (KAIST)

2011 – 2013   **Military service,** Republic of Korea Army
- Discharged upon completing military service as a sergeant
- Combat intelligence army in Command and Control Center in Republic of Korea Army to guard Military Demarcation Line

JOURNAL PUBLICATIONS & INTERNATIONAL CONFERENCES
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JOURNAL PUBLICATIONS

• **M. Song**, Y Shin, K Yun, "Beta frequency EEG activity increased during transcranial direct current stimulation", Neuroreport. 2014;25(18):1433-6.

• **M. Song**, P. Grivaz, O. A. Kannape, M. Perrenoud, G. Rognini, J. B. Ruiz, D.Floreano, A. Serino & O. Blanke, "Superposition of the self: Peripersonal space dynamically remaps around two distinct locations" (**in preparation**)

• **M. Song**, G. Rognini, A. Cherpillod, A. Nesti, P. Grivaz, D. Floreano & O. Blanke, "Flight of mind: Embodiment of the flying avatar improves flight sensations and piloting performance" (**in preparation**)

• **M. Song**, S. Betka, F. Lance, O. A. Kannape, B. Herbelin, O. Blanke, "Disembodied from the body: virtual Out-of-body experience illusion" (**in preparation**)

INTERNATIONAL CONFERENCES

• **M Song**, Y Shin, K Yun, "Beta frequency EEG activity increased during transcranial direct current stimulation" (**OHBM 2014**)

• **M. Song**, S. Betka, F. Lance, O. A. Kannape, B. Herbelin, O. Blanke, "Multisensory & sensorimotor mechanisms underlying out-of-body experience Context" (submitted in **IMRF 2020**)

SKILLS
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UX research: Design of experiments and analysis of data to evaluate user experience quantitatively (Behavioral and Physiological measures) and qualitatively (Questionnaire and Interview) with statistical method
Virtual reality: Programming for behavioral experiments with virtual reality (Unity3D, Motion tracking and virtual avatar reconstruction with Kinect or Vicon, Hand tracking with Leap motion)
Analysis/statistics: Classical statistics (ANOVA, t-test, correlation), Linear mixed model, Mediation analysis, Factor analysis, Bayesian analysis
Neuroimaging: Acquisition and analysis of EEG in human / ECoG in beagle / EEG, local field potential (LFP), and single-unit in mouse
Computer vision: OpenCV, Facial landmark detection with CNN, Image annotation with CNN and RNN (PyTorch), and Graph SLAM
Software skills: C/C++, C#, Python, Java, MATLAB, R, and Blender

LANGUAGES
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Korean	Mother tongue
English	Fluent
French	Basic knowledge