

# Jin Hwa Lee

COMPUTATIONAL NEUROSCIENCE PHD STUDENT · UNIVERSITY COLLEGE LONDON

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## Education

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### University College London

PHD COMPUTATIONAL NEUROSCIENCE

- Supervisor: Prof. Andrew Saxe

London

Oct 2022 - present

### Technical University of Munich

MSc NEUROENGINEERING

- Supervisor: Prof. Mackenzie Mathis
- Thesis: CEBRA: Consistent Embeddings of Neural and Behavioral Activity

Munich

Oct 2019 - Feb 2022

### Korea Institute of Advanced Science and Technology

BSc PHYSICS

- Magna Cum Laude

Daejeon

Mar 2015 - Sep 2019

## Publications

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### PUBLISHED

**Lee, J. H.**, Mannelli, S. S., & Saxe, A. (2024). Why Do Animals Need Shaping? A Theory of Task Composition and Curriculum Learning. ICML 2024 arXiv preprint arXiv:2402.18361.

Schneider, S.\*, **Lee, J. H.\***, & Mathis, M. W. (2023) Learnable latent embeddings for joint behavioral and neural analysis. Nature, 617(7960), 360-368

Servadei, L., **Lee, J. H.**, Medina, J. A. A., Werner, M., Hochreiter, S., Ecker, W., & Wille, R. (2022). Deep reinforcement learning for optimization at early design stages. IEEE Design & Test, 40(1), 43-51.

Mann, K.S., Schneider, S., Chiappa, A., **Lee, J. H.**, Bethge, M., Mathis, A., Mathis, M. W. (2021). Out-of-distribution generalization of internal models is correlated with reward. In Self-Supervision for Reinforcement Learning Workshop-ICLR (Vol. 2021).

### IN REVIEW

## Professional Experience

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2020-2022 **Research Assistant & Master's Thesis**, Supervisor: Mackenzie Mathis, EPFL

2020-2021 **Research Assistant**, Supervisor: Matthias Bethge, University of Tübingen

2020 **Research Assistant**, Supervisor: Jakob Macke, Technical University of Munich

2019 **Working Student**, Supervisor: Lorenzo Servadei, Infineon

## Awards, Fellowships, & Grants

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\$ 1000 <Brain, Minds and Machines> 2024 Summer School Travel Grant

Attendee Scholarship, COSYNE2024

COSYNE

2024 IEEE Brain BCI Hackathon, IEEE

2020

1st Prize

2020 DAAD Scholarship for Master Study, DAAD

\$ 13,000

2017 National Science and Engineering Undergraduate Scholarship, KOSAF

\$ 11,000

## Presentations

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### INVITED TALKS

Winter 2024. Invited talk, Neuronaut, London.

Fall 2023. *Analytical Model of Compositional Learning*. Invited talk, Tim Behrens Lab, SWC, London.

### CONTRIBUTED PRESENTATIONS

Itay Evron, **Lee, J.H.** 2024. 3rd Conference on Lifelong Learning Agents (CoLLAs) Tutorial: Theoretical Advances in Continual Learning. Pisa, Italy

**Lee, J.H.** 2024. A Tutorial on CEBRA. COSYNE Workshop Talk: Sharpening Our Sight. Cascais, Portugal

**Lee, J.H.** Mannelli, S. S., & Saxe, A. 2024. Analytical study on learning dynamics of compositional tasks in the teacher-student setup. Poster: COSYNE, Lisbon, Portugal.

## Teaching Experience

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Fall 2023 **Systems Neuroscience & Theoretical Neuroscience**, Teaching Assistant

*SWC&GCNU,  
London*

Summer  
2020 **Machine Learning: Methods and Tools**, Teaching Assistant

*TUM, Munich*

## Outreach & Professional Development

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2023 **Annalytical Connectionism**, Participant

*London*

2016-2019 **Connect Foundation**, Education Volunteer

*Seoul*

### PEER REVIEW

ICLR 2024 Re-Align Workshop

NeurIPS 2023 Unireps Workshop