

# SEUNGPIIL LEE

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## Personal Statement

Passionate undergraduate student studying artificial intelligence. Interested in Brain-Inspired AI, Natural Language Processing and Reinforcement Learning. Also, maintaining keen interest in interdisciplinary subjects such as Cognitive Science and Science, Technology and Society(STS).

## EDUCATION

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### Gwangju Institute of Science and Technology(GIST)

*March 2018 - December 2024*

Undergraduate

Overall GPA: 3.66/4.50

Major in Electrical Engineering and Computer Science

Minor in Mathematics

Minor in Literature

### UC Berkeley

*June 2019 - August 2019*

Berkeley Summer Session Program

Overall GPA: 4.00/4.00

## SKILLS

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### Computer Languages

C, C++, Java, JavaScript, Python

### Software & Tools

LaTeX, Spring, Spring Boot

### Language

Korean(Native Language), English(Intermediate)

## EXPERIENCE

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### DataScience Lab in GIST

*September 2023 - Present*

*Undergraduate Internship*

- Tried to solve Abstraction and Reasoning Corpus (ARC) benchmark using World Model and Meta Reinforcement Learning

### Development Team in Korea Navy

*January 2022 - September 2023*

- Developed App and Web service for Korean Navy, mainly as back-end developer

### BioComputing Lab in GIST

*June 2020 - January 2021*

*Undergraduate Internship*

- Tried to develop new Spiking Neural Network method with synthetic gradient

## AWARD & SCHOLARSHIP

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### Korean Government Scholarships, GIST College

*March 2018 - present*

- Scholarship awarded to students studying in GIST

### Scholarship for Summer Session Abroad

*June 2019 - August 2019*

- Scholarship awarded to students studying abroad during a summer session

### Navy AI Competition

*June 2023 - August 2023*

- Awarded drone object detecting competition hosted by Korean Navy

- Advanced to the finals of Korean largest start-up contest, 'K-StartUp', as ML researcher and back-end developer

## ACADEMIC ACTIVITIES

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### Publications

- Seungpil Lee\*, Woochang Sim\*, Donghyeon Shin\*, Sanha Hwang, Wongyu Seo, Jiwon Park, Seokki Lee, Sejin Kim and Sundong Kim, "Reasoning Abilities of Large Language Models: In-Depth Analysis on the Abstraction and Reasoning Corpus", **ACM TIST**.
- Lee, Seungpil\*, Woochang, Sim\*, Donghyeon, Shin\*, Sejin, Kim and Sundong, Kim. "Reasoning Abilities of Large Language Models through the Lens of Abstraction and Reasoning (Extended Abstract of the below paper)." **NeurIPS Workshop on System-2 Reasoning at Scale, 2024**.
- Shin, Donghyeon\*, Seungpil, Lee\*, Klea Lena, Kovacec and Sundong, Kim. "From Generation to Selection: Findings of Converting Analogical Problem-Solving into Multiple-Choice Questions." **EMNLP Findings 2024**.
- Donghyeon Shin, Seungpil Lee, Klea Lena Kovačec and Sundong Kim, "Donghyeon Shin, Seungpil Lee, Klea Lena Kovačec, and Sundong Kim", **IJCAI Workshop 2024**.
- Hosung Lee\*, Sejin Kim\*, Seungpil Lee, Sanha Hwang, Jihwan Lee, Byung-Jun Lee and Sundong Kim, "ARCLE: The Abstract and Reasoning Corpus Learning Environment for Reinforcement Learning", **CoLLAs, 2024**.
- Seungpil Lee, Jihwan Lee and Sundong Kim, "Evaluating Prior Knowledge of ARC Using World Models", **Korea Software Congress, 2023**.
- Jihwan Lee, Seungpil Lee, Sejin Kim and Sundong Kim, "Extracting the core knowledge of ARC with the World Model", **Korea Software Congress, 2023**.
- Donghyeon Shin, Sanha Hwang, Seokki Lee, Yunho Kim, Seungpil Lee and Sundong Kim, "MC-LARC Benchmark to Measure LLM Reasoning Capability", **Korea Software Congress, 2023**.

### Projects

- **Software Engineering and Project:** Made a anonymous community system, which censors toxic comments automatically
- **Artificial Intelligence:** Developed a model to identify the actions carried out by a person given a set of observations(acceleration and gyro on x, y, z axis each with 2.56 second window) of itself and the surrounding environment

## EXTRA-CURRICULAR

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### AGIST

August 2020 - January 2021

#### *Deep Learning Study Group*

- Listened to presentations about various machine learning algorithms including explainable AI and Brain-inspired AI
- Prepared presentations of Spiking Neural Network(SNN) with Spike-Timing-Dependent Plasticity(STDP) learning