

# Sang Bin Moon

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## OBJECTIVE

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Dedicated PhD student with 6+ years of industrial experience in Reinforcement Learning (RL) and Software Engineering. Seeking for a ML research or engineering internship position.

## EDUCATION

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**Purdue University,** West Lafayette, IN  
PhD in Electrical and Computer Engineering May 2026

**Columbia University,** New York, NY  
M.S. in Computer Science December 2015

**Korea Advanced Institute of Science and Technology** Daejeon, Korea  
BSc. in Mechanical Engineering; Business and Technology Management February 2014  
Awarded with merit-based *National Science Scholarship*

## SKILLS

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Programming: Python (PyTorch, TensorFlow), C++, Java, distributed system

Research: ML, RL, Optimization, Cost Modeling, Data Synthesis

## PROFESSIONAL EXPERIENCE

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**NCSOFT** Seongnam, Korea  
AI Researcher – *Intelligent Agent Lab, AI Center* January 2016 - August 2022

Pro-Level Battle AI for “*Blade and Soul Arena Battle*”

- Built a ML framework and experimented with RL algorithms such as PDD-DQN, DQfD and ACER with TensorFlow to train pro-level AIs that played neck-and-neck (3 wins and 4 losses) against human world champions
- Collaborated with game designers and professional players to make the competition fair between humans and AIs
- Presented at *Nexon Developers Conference 2019* and authored a research paper in *IEEE Transactions on Games*, June 2022

Multi-Agent AI Playing Boss Raids for Automated Balancing in “*Lineage M*”

- Created attention-based model inspired by “OpenAI Five” with PyTorch to deal with multiple players in a dungeon and various boss patterns
- Implemented a Bayesian optimizer in C++ to provide an automated balancing tool for game developers

Large-Scale Multi-Agent Battle AI for “*Lineage Remastered*”

- Built a deployment sub-module for efficient pathfinding in large dungeon while serving multiple tasks (including battle with players, boss raids and monster hunting)
- Launched the world’s first RL agents in a MMORPG (Massively Multiplayer Online Role-Playing Game)

Financial Trading AI for Automated Execution

- Initiated project to develop financial trade execution module for commercial and institutional investors
- Constructed a data-driven trading simulator and a distributed RL system to achieve excess return on historical market data

**Amazon** Cambridge, MA  
Software Development Engineer (SDE) Intern – *Automatic Speech Recognition Team* May 2015 - August 2015

- Implemented a C++ program that automatically extract recognition path and supplemental data from a language model to help researchers easily detect problems with specific speech samples
- Received fulltime SDE position offer upon completion