

Ju-Seung Byun

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shashacks.github.io



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Research Interests

Reinforcement Learning, Multimodal Learning, Optimization

Education

The Ohio State University, Columbus, OH, USAAug 2019 - Present

- Ph.D. student in Computer Science (Advisor: Andrew Perrault), GPA: 3.73/4.0

University of Southern California, Los Angeles, CA, USAAug 2017 - June 2019

- Master in Computer Science, GPA: 3.61/4.0

Inha University, Incheon, South KoreaMar 2010 - Aug 2017

- Bachelor in Computer Science, GPA: 3.87/4.5
- Minor, Mathematics

Publications

- **(Preprint) Normality-Guided Distributional Reinforcement Learning for Continuous Control**
Ju-Seung Byun, Andrew Perrault

arXiv:2208.13125

[Paper](#)

[Code](#)

- **Training Transition Policies via Distribution Matching for Complex Tasks**
Ju-Seung Byun, Andrew Perrault

The Tenth International Conference on Learning Representations (ICLR 2022)

[Paper](#)

[Code](#)

[Video](#)

- **Proximal Policy Gradient: PPO with Policy Gradient**
Ju-Seung Byun, Byungmoon Kim, Huamin Wang

arXiv:2010.09933

[Paper](#)

[Code](#)

- **Development of application that removes moving objects from pictures**
Ju-Seung Byun, Min-ho Kim, Byung Seok Shin
Korea Information Processing Society (KIPS) Jeju, Korea, 2017 Fall.

Academic Experience

OSU, Amazon Alexa Prize SimBot ChallengeApril 2022 - Current

- Introducing reinforcement learning to language models that do planning based on human speaking for interactive robots

USC, Computer Graphics and Immersive Technologies LaboratoryFeb 2018 - Dec 2018
Master Student (Adviser: Ulrich Neumann)

- Participating in Core 3D Project
 - Developed 3D Viewer for Skeleton Structure System Buildings
 - Hole Filling Resulting from Plane Detection RANSAC
 - Rectify DEM Data through Deep Learning

Course and Personal Projects

- Implementation of Simple Inverse Kinematic Chains [Link](#)Apr 2018
- Ray Tracing with CUDA [Link](#)Apr 2018
- 2D Particle System and Smoothed Particle Hydrodynamics for Water Simulation [Link](#)Mar 2018
- Simulating a Catmull-Rom Spline Roller Coaster [Link](#)Mar 2018
- Jell-O Cube Simulation with Objects and User Interaction [Link](#)Feb 2018
- Implement Simple Cloth Simulation with Ball [Link](#)Dec 2017

Inha University, Computer Science Media LabMar 2015 - Aug 2017
Undergraduate Intern (Adviser: Byung Seok Shin)

- Participated in Lab Seminar Related to Computer Graphics
- Developed Image Viewer for Medical Picture

Work History

ArC-AI, Google Internship, Mountain View, CAMay 2022 - Aug 2022

- Google Software Engineering Intern Ph.D.
- Enhancing PII Abuse Detection with Machine Learning Augmented Analysis

Republic of Korea Army, Field Communication UnitMay 2012 - Feb 2014

- Assignment: Signal Corpsman | Rank: Sergeant
- Served as Squad Commander for the last four months

Teaching assistants

OSU, Research AssistantSpring 2021 - Present

- STRIDES Lab (Advisor: Andrew Perrault)

OSU, CSE-5544 Introduction to Data VisualizationFall 2019 - Fall 2020

- Duties including office hours and grading projects

USC, CSCI-520 Computer Animation and Simulation (Grader)Spring 2019

- Evaluating three programming assignments in C/C++ and OpenGL

Computer Skills

Languages: C, C++, Java, Python, MATLAB, CSS, JavaScript, HTML
Tools & Libraries: OpenGL, Cuda, PyTorch