

# Ju-Seung Byun

📍 2015 Neil Ave, Columbus, OH 43210



[shashacks.github.io](https://shashacks.github.io)



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## Research Interests

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Reinforcement Learning, Multimodal Learning, Optimization

## Education

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The Ohio State University, Columbus, OH, USA .....Aug 2019 - Present

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

University of Southern California, Los Angeles, CA, USA .....Aug 2017 - June 2019

- Master in Computer Science, GPA: 3.61/4.0

Inha University, Incheon, South Korea .....Mar 2010 - Aug 2017

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

## Publications

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- **(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

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OSU, Amazon Alexa Prize SimBot Challenge .....April 2022 - Current

- Introducing reinforcement learning techniques such as hierarchical RL and offline RL to train a conversational embodied agent

USC, Computer Graphics and Immersive Technologies Laboratory .....Feb 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 Lab .....Mar 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

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ArC-AI, Google Internship, Mountain View, CA .....May 2022 - Aug 2022

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

Republic of Korea Army, Field Communication Unit .....May 2012 - Feb 2014

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

## Teaching assistants

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OSU, Research Assistant .....Spring 2021 - Present

- STRIDES Lab (Advisor: Andrew Perrault)

OSU, CSE-5544 Introduction to Data Visualization .....Fall 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

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