JAEHYUN LEE

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Github: github.com/LEE-JAE-HYUN179 | Website: www.leejaehyun179.com

RESEARCH INTERESTS

Computer Graphics, Physics-Based Animation, Deformable bodies, Fluids, Coupling, Scientific Computing, Numerical methods, Optimization

EDUCATION

Korea University   Seoul, Republic of Korea
M.S. in Computer Science and Engineering   *Sep. 2021 – present*
- Advised by Prof. JungHyun Han
- GPA: 4.24/4.5

Korea University   Seoul, Republic of Korea
B.S. in Mechanical Engineering (Double major in Computer Science and Engineering)   *Mar. 2015 – Feb. 2021*
- Including 2 years of Military service
- GPA: 4.4/4.5
- **Graduated with Great Honor**

PUBLICATIONS

- **JaeHyun Lee**, Seung-wook Kim, Kiwon Um, Min Hyung Kee, JungHyun Han. "Inversion alleviation for stable elastic body simulation." In Computer Animation and Virtual Worlds (CAVW), Vol. 34, No. 3-4, May 2023, pp. e2183. [paper] [video]

RESEARCH AND PROJECT EXPERIENCE

Dimension Expansion for Mass-spring Simulation of Elastic Body   Korea University
Researcher   *Mar. 2023 – present*
- Proposed and implemented a dimension expansion method for simulating the mass-spring model. By expanding the dimension, the solver became robust and efficiently resolve complex deformations. [video]

Energy Suppressing method for Material Point Method (MPM)   Korea University
Researcher   *July. 2023 – present*
- Contributed the project by implementing C++, CUDA based state-of-the-art MPM Framework with OpenGL visualize system. [code]

LG Electronics: Air Conditioning Airflow Simulation Visualization System   Korea University
Project Assistant   *Feb. 2023 – May. 2023*
- Contributed the project by implementing Python, GPU based real-time air flow simulator visualized with volume rendering. [code] [video]

Collision Detection for Constrained Projective Dynamics (CPD)   Korea University
Reasearch Assistant   *Dec. 2020 – Mar. 2021*
- Implemented tetrahedral collision detection module for ACM Transactions on Graphics 2021 paper titled 'Constrained Projective Dynamics: Real-Time Simulation of Deformable Objects with Energy-Momentum Conservation'. [paper] [video] [code]

TEACHING

Computer Graphics   Korea University
Teaching Assistant   *Spring 2022*
- Teaching Assistant for COSE331 Computer Graphics at Korea University. (Instructor: Prof. JungHyun Han)

SCHOLARSHIPS

Special Scholarships, Korea University	*Spring, Fall 2018*
National Science and Engineering Scholarship, Ministry of Science and ICT	*Spring 2019 – Fall 2020*
Research Scholarships, Korea University	*Fall 2021, Fall 2022*
Kwanjeong Educational Foundation Scholarship, Kwanjeong Educational Foundation	*Spring 2022 – Fall 2023*
Teaching Assistant Scholarship, Korea University	*Spring 2022*

HONORS AND AWARDS

Semester High Honors, Korea University	*Spring 2017 – Spring 2020*
Dean's List, Korea University	*Spring 2018*
President's List, Korea University	*Fall 2018 – Spring 2019*
Great Honor, Korea University	*Graduation*
Best Research award, Korea Electronics Association	*Feb 2021, Aug 2023*

TECHNICAL SKILLS

Languages: C/C++, Python, Java

Graphics APIs: OpenGL, CUDA

Other Tools: Git, Eigen, PyTorch, Fusion360, CMake, Taichi Lang, Blender

LANGUAGE LEVEL

Korean: Native

English: Fluent