

JAEKWANG KIM

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EDUCATION

University of Illinois at Urbana-Champaign, IL *2018 - Present*
PhD in Theoretical and Applied Mechanics
Department of Mechanical Engineering

University of Illinois at Urbana-Champaign, IL *2016 - 2018*
M. S. in Theoretical and Applied Mechanics
Department of Mechanical Engineering

Seoul National University, South Korea *2009 - 2015*
B. S. in Naval Architecture & Ocean Engineering with the highest honors.

RESEARCH EXPERIENCE

Research Assistant at Admal Research Group *2019 - Present*
Mathematical modeling and simulations of grain growth

Research Assistant at Freund & Ewoldt Research Group *2016 - 2018*
Uncertainty quantification in simulation predictions of complex fluids

Undergrad Research Intern at Marine Propeller laboratory *2015 - 2016*
Shadow-graphic image analysis to ventilated super-cavities phenomena

PUBLICATION

J.B. Freund J. Kim, R. H. Ewoldt
Field sensitivity of flow predictions to rheological parameters, *Journal of Non-Newtonian Fluid Mechanics*, Vol 256, pp 71–82, 2018.

J. Kim, P. K. Singh, J.B. Freund, R. H. Ewoldt
Uncertainty Propagation in Simulation Predictions of Generalized Newtonian Fluid Flows, *Journal of Non-Newtonian Fluid Mechanics*, Vol 271, 104138, 2019.

J. Kim, J. D. Park
The non-homogenous flow of a thixotropic fluid around a sphere, *Applied Mathematical Modeling*, Vol 82, 848–866, 2020.

CONFERENCE

J. Kim, P. K. Singh, J.B. Freund R. H. Ewoldt
Poster, Uncertainty Propagation in Simulation Predictions of Generalized Newtonian Fluid Flows, *Society of Rheology 89th Annual Meeting*, 11 October 2017, Denver, USA.

Including 2 years of military service during the program

J.B. Freund, J. Kim, R. H. Ewoldt

Field sensitivity of flow predictions to rheological parameters, *Society of Rheology 90th Annual Meeting*, 16 October 2018, Houston, USA.

J. Kim, M. Jacobs, N. C. Admal

A fast thresholding algorithm for the Kobayashi-Warren-Carter grain boundary model, *2020 Society of Engineering Science*, 29 September - 1 October 2020, Virtual Conference (COVID-19)

TECHNICAL SKILLS

Programming	C++, Python, MATLAB, Git, Unix/Linux
Software	deal.II, Gmsh, LAMMPS, Mathematica
Documentation & Tools	Latex, Pgfplot, Tikzfigure, Bibtex
Experimental Tools	Rheometer (DHR-3), Electron Microscope (JEOL 7000F).

TEACHING ASSISTANTSHIP

Introduction to Statics Fall 2020

- Hosting and managing discussion session. Exam problem develop in *PrairieLearn* online testing/homework platform.

Introductory Solid Mechanics Summer 2019, Fall 2019, Spring 2020

- Lead discussion session. Maintain and add features to *PrairieLearn* online testing/homework platform. Homework and exam question development. Python, html, git, and **docker** are used.
- Hold office hours

Fundamentals of Fluid Dynamics Spring 2019

- Lead laboratory sessions, grading laboratory reports and homeworks

GRADUATE COURSES

Solid Mechanics: Solid Mechanics 1 (Fundamentals of continuum mechanics), Micro Mechanics of Material, Atomistic Solid Mechanics

Fluid Mechanics: Inviscid Flow, Viscous Flow, Instability and Transition, Non-Newtonian Fluid Mechanics & Rheology, Dynamics of complex fluids

Numerical Method: Computational Mechanics, Uncertainty quantification

AWARD

Graduation with Honors, Summa Cum Laude., *Ranked No.1 in the department*, President of Seoul National University, South Korea, 2015

National Science & Technology Scholarship, Ministry of Science and Technology, South Korea, 2012–2015.

Member of Seoul National University student honor society, STEM, 2013 - *present*

Excellence Award in Writing in Science&Technology, Dean of College of Engineering, Seoul National University, South Korea, 2013.

Excellence Award in Student Ship Design Competition, Society of Naval Architects, South Korea, 2013.

INTERNSHIP AND EXTRA-CIRRUCULAR

Lab Assistant, Worldwide Youth in Science and Engineering Program, 2020 Summer

Internship, Samsung Electronics Mechatronics Research Center, *Advanced Technology Research Group*, 2020 Summer

Exhibitor, Engineering Open House, *Rheology Zoo*, 2017, 2018

Exchange Student, Chemical Engineering Department, Monash University, Australia, 2014

Internship, Korea Register of Shipping, 2013 Winter

Military Service, Korea Army Training Center, South Korea, 2010–2012