Jongsu **Kim**

Machine Learning Researcher · Data Scientist · Software Engineer

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Skills

Machine Learning	Time Series Forecasting, Natural Language Processing
Machine Learning Frameworks	PyTorch, Tensorflow, Keras, Flux.jl
Programming Languages	Python, Julia, C++, Fortran, MATLAB, HTML/CSS, Javascript, TypeScript
Mathematics	Numerical Analysis, Statistics, Partial Differential Equation
Fluid Mechanics	Computational Fluid Dynamics, Turbulence Modeling, Immersed Boundary Method
Code and Code Quality Managing	Git, GitHub, Travis-Ci, Github Actions, pytest, tox
Server Engineering	Linux, High Performance Computing, Cloud Computing (AWS, GCP)

Education

Yonsei University
Ph.D. in Computational Science and Engineering-Mechanical/Electrical Engineering
Seoul, S.Korea
Sep. 2011 - Aug. 2021

Yonsei University
BSc in Atomspheric Science
Seoul, S.Korea
Mar. 2007 - Aug. 2011

Yonsei University
BSE in Computer Science
Seoul, S.Korea
Mar. 2007 - Aug. 2011

Publications

Deep Particulate Matter Forecasting Model Using Correntropy-Induced Loss
Jongsu Kim and Changhoon Lee
Journal of Mechanical Science and Technology, 35.9 (2021): 4045-4063
https://doi.org/10.1007/s12206-021-0817-4

Path instability of a spheroidal bubble in isotropic turbulence
Gihun Shim, Jongsu Kim, and Changhoon Lee
Physical Review Fluids, 6.7 (2021): 073603
https://doi.org/10.1103/PhysRevFluids.6.073603

Presentations

머신러닝 기반의 미세먼지 장기 예측 모델 개발
Jongsu Kim and Changhoon Lee
2019 대한기계학회 2019년도 추계학술대회

Predicting Concentration of Atmospheric Aerosol Particle using Machine Learning Technique
Jongsu Kim and Changhoon Lee
2019 2019년 한국계산과학공학회 춘계학술대회 및 정기총회

The numerical investigation on collision between two droplets within effects of gravity force
Jongsu Kim and Changhoon Lee

2014 제8회 유체공학 학술대회

중력장 내에서의 두 액적 충돌에 관한 수치 시뮬레이션에 관한 연구
Jongsu Kim and Changhoon Lee
2014 대한기계학회 2014년도 추계학술대회

중력 하에서의 액적 충돌 시뮬레이션
Jongsu Kim and Changhoon Lee
2012 대한기계학회 2012년도 추계학술대회

Experience

School of Mathematical Computing, Yonsei University Seoul, S.Korea
Ph.D. Student Sep. 2011 - Aug. 2021

- Particulate Matter (PM) forecasting by deep learning methods for time series forecasting (2018-2021)
- Modeling and simulation of finite-size particles in homogeneous isotropic turbulence using psuedo-spectral methods and immersed boundary methods (2015-2018)
- Modeling and simulation of finite-size droplets in laminar flows with gravity field using level set methods (2011-2015)
- Communicate to support laboratory colleagues who was struggling with computer science-related problems such as algorithms, debugging, and so on. The process was then documented so that the next time the team encountered the same situation, they could follow a similar procedure.
- Programming knowledge (mainly Julia, C++, Fortran)
- Create web pages for multiple purposes in the department, such as conference, introduction pages, and so on.
- Administrator of laboratory server (cluster with 30 nodes)

Language Skills

English
Intermediate

- TOEIC 875 (2021. 01.)
- OPIc IH(Intermediate High) (2021. 09.)

Korean
Native

Open-Source Contributions

Impute.jl	ISSUE#58, ISSUE#61, PR#54
LAMPSPUC/StateSpaceModels.jl	ISSUE#143
optuna/optuna	ISSUE#2011
bokeh/bokeh	ISSUE#10172
JuliaGPU/CuArrays.jl	ISSUE#346
minmul117/vscode-sublette	ISSUE#9, PR#6, PR#18
FluxML/Flux.jl	ISSUE#930
@types/cytoscape	PR#42293
@types/mathjs	PR#30211, PR#32117
capajon/r6maps	PR#27, PR#40, PR#59, PR#63
juliakorea/doc	PR#11, PR#12, PR#16, PR#20, PR#27, PR#28, PR#51, PR#54
jacobwilliams/json-fortran	ISSUE#152