

GIST Mini Symposium on Artificial Intelligence for Mechanical Engineering

Date 2021.12.09^{Thu} - 12.10^{Fri}

Location GIST ME 102, 114, 228

Zoom ID: 885 1402 9063, PW: GIST-AI-ME









| Time | Dec. 9th Thursday (17:00 ~ 19:30) |
|-------------|-----------------------------------|
| 17:00~18:00 | GIST Lab Tour |
| 18:00~19:30 | Welcome Reception |

| Time | Dec. 10th Friday (08:00 ~ 13:30) |
|-------------|----------------------------------|
| 07:30~08:00 | Coffee and Cookies |

Plenary Session Chair : Prof. Solkeun Jee (GIST)



| | |
|-------------|---|
| 08:00~08:05 | Opening Remark |
| 08:05~08:45 |  Mechanics Meet Artificial Intelligence, Prof. Amir Barati Farimani (Carnegie Mellon U., USA) |
| 08:45~09:25 |  An ANN-Based Model-Order-Reduction Method for Large-Scale TO Designs, Prof. Wenjing Ye (Hong Kong UST, CHN) |
| 09:25~10:05 |  Machine Learning for Scientific Discovery, Prof. Steven Brunton (U. Washington, USA) |
| 10:05~10:20 | Break |

| | Fluid Dynamics with AI Chair Prof. Seongim Choi (GIST)  | Structural Design Optimization Chair Prof. Jaewook Lee (GIST)  | System Health Diagnosis Chair Prof. Hyunseok Oh (GIST)  |
|-------------|--|---|--|
| 10:20~10:50 | End-to-End Differential Learning of Turbulence Model from Indirect Observation Data Prof. Heng Xiao (VA-Tech, USA) | Structural Optimizations for Additively Manufactured Functional Structures Prof. Akihiro Takezawa (Waseda U., JPN) | Physics-informed Machine Learning for Battery Health Prognostics - Challenges, Data Acquisition, and Methodologies Prof. Chao Hu (Iowa State U., USA) |
| 10:50~11:20 | Turbulence Modeling with Machine Learning for Separated Flows Prof. Solkeun Jee (GIST) | Bone Microstructure Reconstruction from Clinical CT Scan Data Prof. In Gwun Jang (KAIST) | AI Meets Physics vs. Physics Meets AI Prof. Seungchul Lee (POSTECH) |
| 11:20~11:50 | Fluid Dynamic Control and Optimization Using Deep Reinforcement Learning Prof. Donghyun You (POSTECH) | Topology Optimization using PINN Prof. Jaewook Lee (GIST) | Smart Diagnostic Robot for Patrol Inspection of Underground Transmission System Prof. Ki Yong Oh (Hanyang U.) |
| 11:50~12:20 | Data-Driven Multi-Fidelity Aerodynamic Analysis and Design Method Prof. Seongim Choi (GIST) | AI-powered Generative Design Prof. Namwoo Kang (KAIST) | Machine Health Diagnosis with AI Prof. Hyunseok Oh (GIST) |
| 12:20~13:30 | Lunch | | |