Youndo Do

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OBJECTIVE

Graduate student for Doctor of Philosophy in Mechanical Engineering. Seeking further research opportunities for Fall 2023.

EDUCATION

Georgia Institute of Technology, College of Engineering — **Atlanta, Georgia**

Master of Science in Mechanical Engineering — *May 2020*

- Concentration on AI/Informatics

Bachelor of Science in Mechanical Engineering — *May 2017*

- Minor in Industrial Design

RESEARCH EXPERIENCE

Multi-Scale Systems Engineering Research — **Atlanta, Georgia**

Research Assistant with Prof. Yan Wang — *2018 – 2020*

- Investigated ABI model which quantifies trust of cyber physical system in ability, benevolence, and integrity.
- Conducted a survey on Cyber-Physical Systems design principles in physical, virtual, and mental worlds.
- Used discrete Bayesian optimization method to find the most trustworthy node of CPSs.

Computational NanoBio Technology — **Atlanta, Georgia**

Research Assistant with Prof. Seung Soon Jang — *2014 – 2017*

Leader of Lithium Battery Team — *2015 - 2017*

- Performed Monte Carlo simulation and tested over 200 molecular compounds to compare red-ox potential values for battery use.
- Led and guided Lithium Battery team members to apply different techniques of simulation using a variety of programs such as Cerius2 and Jaguar.

INDUSTRY EXPERIENCE

Netmarble Corp. — **Seoul, Korea**

AI Researcher — ***2022 – Ongoing***

- Developed deep reinforcement learning simulators for four games including AAA games to adequately transfer data between corresponding reinforcement models and simulation environment for distribution deep RL training process.
- Used Google ML kits - such as Vertex AI, Big Query ML - and Compute Engines to execute mass learning, analyze data, and visualize the outcome to 8,000 co-workers.
- Currently working on distributed multi-agent reinforcement learning.

Vespa Interactive — **Seoul, Korea**

R&D Researcher — ***2020 – 2022***

- Created One Click Build System, which create virtual city procedurally with many parameters tuning with ease and reduce the length of building a virtual city from two months to only a week (saved 20 million dollars).

- Developed a general SDK, which can be mounted on a simulator to obtain data through mass simulation and analyze the data on Big Query to balance characters' stats based on big data analysis
- Improved Chaos Physics system of Unreal Engine to fix critical frame drops in destroying 3d models with more than 100,000 polygons.

Inverse Kinematics System Team Leader ***2021***

- Implemented Jacobian pseudo-inverse to improve two-bone IK system into multi-bone IK system.
- Reduced animators' workloads by one-eighth, which resulted in profit of 200,000 dollars per month.
- Retailed the new IK system to other studios which applied the system to two MMORPG games and a metaverse project.

Lego Education **Denmark**
Mindstorms and LabVIEW KIT Developer Intern *Summer 2014*

- Built multiple contents with Mindstorms kit and LabVIEW to enhance interest in and understanding of robotics and coding for kids in early age (5+).
- Published textbooks in English and Korean, which were used in over 100 academies and schools.

Funers **Seoul, Korea**
Mechanical Engineer Intern *Summer 2016, 2017*

- Built logistic systems with Mindstorms and Python to simulate the processes done in factories and harbors.
- Led the project team to present the system to Prof. Zhang of Tongji University for his Queueing Theory course and sold the system with a profit of 30,000 dollars per system.

PROFESSIONAL ACTIVITIES

Advising **Atlanta, Georgia**
Mentor of student on research projects

- Brian Contreras (MS) *2019*
- Omar Allam (BS) *2017*

Robotics Lab Developer **Atlanta, Georgia**
Advanced Robotics Class Lab Developer with Prof. Nadir Sadegh *2015 – 2016*

- Evaluated the ROS platform and different python libraries for lab tasks for closed and open loop systems.
- Designed lab materials for the advanced undergraduate ME course in Spring (ME4451).
- Created a room mapping content with TurtleBot and a ball grabbing content with a 3-pivot arm robot.

CERTIFICATE

Machine Learning Certificate **Stanford University**
2019

Intermediate Machine Learning: TensorFlow on Google Cloud **Google Cloud**
2021

Machine Learning Engineer Professional Certificate **Google Cloud**

- *The exam is in December 2022. This certificate is not acquired yet.* *2022*