YOUNGJAE MIN

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INTERESTS

Designing and analyzing autonomous systems, inference, learning, control

EDUCATION

Massachusetts Institute of Technology — Cambridge, MA
Master Student in Dept. of Aeronautics and Astronautics — From Sep. 2021

Korea Advanced Institute of Science and Technology — Daejeon, Korea
B.S. in Electrical Engineering and Mathematical Sciences — Mar. 2014 - Feb. 2020*
GPA: 4.1/4.3 (*summa cum laude*) — (*inlcude two years of military service)

RESEARCH EXPERIENCE

Perception, Planning, Inference | PI: Prof. Han-Lim Choi — Feb. 2019 - July 2021
Laboratory for Information and Control Systems, Dept. of Aerospace Eng., KAIST

- Mapped 3-D dynamic occupancy in real-time from LiDAR data [C1]
- Planned mobile sensor networks with uncertainty under GPS-denied environments through combined Bayesian filters, PF and EKF [C2]
- Proposed online learning and planning of partially observable dynamical systems via variational inference on Gaussian process models [J2]
- Planned non-myopic paths of mobile sensors for multi-target tracking by adopting distributed optimization, ADMM [J3]

Provable Neural Network Classifier | PI: Prof. Hye Won Chung — Mar. 2018 - Jan. 2019
Inference and Information for Data Science Lab, Sch. of Electrical Eng., KAIST

- Designed neural network classifiers that generalize to separable distributions through saturation of sigmoid activation function [C3, J1]

Vital Sign Monitoring | PI: Prof. Fadel Adib — June 2018 - Sep. 2018
Signal Kinetics Group, Media Lab, MIT

- Built real-time blood flow measurement system from scratch using mmWave radar technology

Indoor Localization | PI: Prof. Sung-Ju Lee — June 2017 - Feb. 2018
Networking & Mobile Systems Lab, Sch. of Computing, KAIST

- Estimated indoor person location through channel information from commodity Wi-Fi devices

PUBLICATIONS

Conference Proceedings

1. **Y. Min**, D. Kim, H. Choi
"Kernel-Based 3-D Dynamic Occupancy Mapping with Particle Tracking"
IEEE International Conference on Robotics and Automation (ICRA), Xi'an, China, June 2021

2. **Y. Min**, S. Park, H. Choi [arXiv: 1909.11046]
"Informative Planning of Mobile Sensor Networks in GPS-Denied Environments"
AIAA Science and Technology Forum and Exposition (SciTech GN&C), Orlando, USA, Jan. 2020

3. **Y. Min** and H. W. Chung [arXiv: 1904.09109]
"Shallow Neural Network can Perfectly Classify an Object following Separable Probability Distribution," *IEEE International Symposium on Information Theory* (ISIT), Paris, France, July 2019

4. S. Kim, **Y. Min**, Y. H. Kim
"Measurements of sliding friction forces under ultrasonic oscillations: out-of-plane oscillations"
IEEE International Ultrasonics Symposium (IUS), Chicago, USA, Sep. 2014

5. G. Yun, K. Kim, Y. Roh, **Y. Min**, J. Lee, Y. H. Kim
"Comparison of slowness curves of Lamb wave with elastic moduli and crystal structure in silicon wafers," *IEEE International Ultrasonics Symposium* (IUS), Prague, Czech Republic, July 2013

Journal Articles

1. **Y. Min** and H. W. Chung
"Saturation Leads to Generalization: Sigmoid-Type Neural Network Classifier for Separable Distribution," in preparation for *IEEE Signal Processing Letters* (SPL)

2. S. Park, Y. Park, **Y. Min**, H. Choi [arXiv: 1903.08643]
"Online Gaussian Process State-Space Model: Learning and Planning for Partially Observable Dynamical Systems," accepted at *International Journal of Control, Automation and Systems*

3. S. Park*, **Y. Min***, J. Ha, D. Cho, H. Choi (*equally contributed) [arXiv: 1807.11068]
"A Distributed ADMM Approach to Non-Myopic Path Planning for Multi-Target Tracking"
IEEE Access, vol. 7, no. 1, pp. 163589-163603, Nov. 2019

4. **Y. Min**, G. Yun, K. Kim, Y. Roh, Y. H. Kim
"Comparison of slowness profiles of Lamb wave with elastic moduli and crystal structure in single crystalline silicon wafers"
Journal of the Korean Society for Nondestructive Testing, vol. 36, no. 1, pp. 1-8, Feb. 2016

Honors & Awards

2020 Global Leadership Award, *KAIST*	2020
KAIST Presidential Fellowship, *KAIST*	2014 - 2020
Dean's List, *College of Engineering, KAIST*	Fall'14, Spring'15, Spring'17, Spring'19
GE Foundation Scholar-Leaders Program, *Fulbright / GE Foundation*	2015 - 2019
Undergraduate Student Scholarship, *Korea Foundation for Advanced Studies*	2015 - 2019
Army Commendation Medal, *United States Department of the Army*	2017

Teaching Experience

PH141 General Physics I, Tutor, *KAIST*	Spring'15, Spring'17
KAIST Global Institute for Talented Education, Online Tutor, *KAIST*	Aug. 2014 - July 2015

Extracurriculars

KAIST EE Newsletter, Reporter, *KAIST*	Mar. 2017 - Dec. 2017
ROK Army & U.S. Army, IT Specialist (Sergeant, KATUSA), *Cp. Carroll*	July 2015 - Apr. 2017
The Real LUNATIC, B-Boy, *KAIST*	Mar. 2014 - July 2015

Skills

Programming	C/C++, Python, MATLAB, ROS, CUDA, TensorFlow
Languages	Korean (native), English (TOEFL iBT 108/120, GRE Verbal 159/170)