전정환 Jeong hwan Jeon

전기전자공학과 / Electrical Engineering

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Curriculum Vitae

2019.08 ~ Current: Assistant Professor, UNIST

2018.11 ~ 2019.08: Principal Research Scientist, nuTonomy (an Aptiv company)

2015.09 ~ 2018.10: Senior Research Scientist, nuTonomy (an Aptiv company, acquired in 2017)

Academic Credential

2015.09: Ph.D. in Aeronautics and Astronautics, MIT

2009.09: S.M. in Aeronautics and Astronautics, MIT

2007.02: B.S. in Mechanical and Aerospace Engineering, Seoul National University

Awards/Honors/Memberships

Member of the IEEE

Robotics and Mobility Lab.
로보틱스 및 모빌리티 연구실

Dr. Jeon's areas of expertise lie in the fields of control theory, motion planning, optimization methods, robotics, autonomous systems, and future mobility including self-driving cars. After years of research at MIT and four years of work at nuTonomy (a self-driving technology startup acquired by Delphi/Aptiv in 2017), he hopes to make everyone's daily living safer and efficient by technological advances. His current focus of research is on 1) algorithms for robots and autonomous systems, 2) control theory and applications, 3) the design, development, and deployment of future mobility system and many of its components with maximized safety and efficiency, ultimately aiming for zero traffic fatality. Very often, research outcomes in robotics and control theory lead to the improved future mobility system.

관심분야	희망분야
control theory, motion planning, optimization methods, learning-based algorithms, robotics, autonomous systems, future mobility, self-driving cars	control theory, motion planning, optimization methods, learning-based algorithms, robotics, autonomous systems, future mobility, self-driving cars

Research Keywords and Topics

- control theory, motion planning, optimization methods, learning-based algorithms, robotics, autonomous systems, future mobility, self-driving cars
- safe learning-based algorithms, behavior/intent prediction, safety against malicious attacks, high-performance robotic maneuvers, traffic control for self-driving cars, energy-efficient driving

Research Publications

- IEEE Conference on Decision and Control and European Control Conference (CDC-ECC), Anytime computation of time-optimal off-road vehicle maneuvers using the RRT*, J. Jeon, S. Karaman, E. Frazzoli (2011)
- American Control Conference (ACC), Optimal motion planning with the half-car dynamical model for autonomous high-speed driving, J. Jeon, R. V. Cowlagi, S. C. Peters, S. Karaman, E. Frazzoli, P. Tsiotras, K. Iagnemma (2013)
- IEEE International Conference on Robotics and Automation (ICRA), Optimal sampling-based feedback motion trees among obstacles for controllable linear systems with linear constraints, J. Jeon, S. Karaman, E. Frazzoli (2015)