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EDUCATION

Ulsan National Institute of Science and Technology (UNIST) **Ulsan, Korea**
Ph.D. Candidate of Management Engineering Sep 2017–Present

- Concentration: Market microstructure, High frequency trading, Machine learning and Big data analytics
- Academic Performance Scholarship Recipient for every semester
- Core course: Statistical Learning, Financial Engineering(금융공학), Multivariate Analysis(다변량 분석), Econometrics (계량경제학)

Ulsan National Institute of Science and Technology (UNIST) **Ulsan, Korea**
M.S. of System Design and Control Engineering Sep 2013–Aug 2017

- Concentration: Self-resilient process control, Data(signal) analytics, and Machine learning
- Thesis Title: In-Process Laser Welding Monitoring by Fusing the Uncertain Signal Information of Multi-Photodiode Sensors
- Academic Performance Scholarship Recipient for every semester
- Core course: BCI(Brain-Computer Interaction), Advanced Machine Learning(고급기계학습), Advanced Multivariate Statistics and Data Mining(고등다변량기법과 데이터마이닝), Advanced Engineering System Design(고등공학디자인기법), Signals and Systems(공학 및 시스템디자인 특론 I), Optimization(공학 및 시스템디자인 특론 II), Root Cause Analysis (근본원인분석), Image Processing(영상처리)

Ulsan National Institute of Science and Technology (UNIST) **Ulsan, Korea**
B.S. of Engineering & Systems Design and Electrical Engineering Mar 2009–Aug 2013

- Academic Performance Scholarship Recipient for every semester; Semester Award for a semester

PUBLICATIONS

- **R. Oh**, K. Bae, & D. Kim; Text-based Industry Classification by Autoencoder, Proceedings of The Korean Finance Association, 2018, 1450-1468.
- **R. Oh**, D. -Y. Kim, & D. Ceglarek; The Effects of Laser Welding Direction on Joint Quality for Non-Uniform Part-to-Part Gaps, Metals, 2016, 6(8), 184.
- **R. Oh**, J. Park, & D. -Y. Kim; LaserWel: A Laser Welding Process Monitoring & Fault Classification System, Proceedings of the Society of CAD/CAM Conference, 2016, 934-937.
- S. J. Baek, **R. Oh**, & D. -Y. Kim; Defect Detection in Laser Welding Using Multidimensional Discretization and Event-Codification, Journal of the Korean Society for Precision Engineering, 2015, 32(11), 989-995.
- **R. Oh**, & D.-Y. Kim; A Fault Detection Method of Laser Welding based on PDF Estimation and Dempster-Shafer Theory, Proceedings of the Society of CAD/CAM Conference, 2014, 1011-1016.

PROFESSIONAL EXPERIENCE

Smart Factory Lab., UNIST **Ulsan, Korea**
Researcher Aug 2015–Mar 2016

BSR noise detection from car door trims using composite sensing information of acoustic emission and vibration

- Worked with SEOYON E-HWA, RECTUSON and KIAT(PI)
- Surveyed on RSR noise characteristics of car door trim
- Identified key features from door trim noise
- Developed noise signal reference guide in frequency domain

Smart Factory Lab., UNIST **Ulsan, Korea**
Researcher Aug 2013–Feb 2015

Remote Laser Welding Process Control for Eco-Automotive Factories

- Worked with PNU, SUNGWOO Hitech, ILSHIN Tech, SIS, and KIAT(PI).
- Managed the project as a staff in charge including research, related events, and schedule
- Conducted experiments on laser welding quality by varying the key characteristic indicators
- Developed an on-line weld fault detection algorithm based on the Dempster-Shafer theory
- Developed a sensor system for monitoring the remote laser welding
- Developed an integrated(C#-based) process monitoring software

Smart Factory Lab., UNIST **Ulsan, Korea**
Researcher Aug 2013–Aug 2015

RLW Navigator: Remote Laser Welding System Navigator for Eco & Resilient Automotive Factories

- The project funded by European Commission
- Worked with Univ. of Warwick(PI), EPFL, COMAU, PRECITEC, JAGUAR and LANDROVER, other 7 companies and research institutes
- Conducted over 800 coupon tests on laser welding quality for laser parameter adjustment system to compensate for output parameter deviation from required performance profile
- Developed Matlab-based weld defect detection software
- Attended annual review on the project: Budapest in Hungary (Nov 2013), London in U.K. (Mar 2014 and June 2015)
- Hosted consortium iRLW 2014 in Ulsan, Korea

UNIST **Ulsan, Korea**
Teaching Assistant Sep 2013–Dec 2015

Courses: System Control, Computational Tools for Engineers, Intro to Engineering System Design, Design IT, and Design for X(Introduction to PLM)

- Created lab session material and conducted lab sessions
- Graded quiz, term project, assignment and exam
- Guided over 220 students

CSI Lab under professor Duck-Young Kim, UNIST **Ulsan, Korea**
Research Assistant Jan 2013–June 2013

- Conducted experiments for gathering vehicle engine data
- Determined control limits for vehicle engine fault and pre-processed engine data
- Developed database connection module for MATLAB

Dong-AH Electric **Hwaseong-si, Korea**
Research Intern, R&D center Jan 2012–Feb 2012

- Developed electric testing multi-jig for HVAC controller
- Evaluated and tested new HVAC controller prototypes

UCIM Lab under professor Nam-Hun Kim, UNIST **Ulsan, Korea**
Research Assistant Jun 2011– Aug 2011

- Survey and studied on concepts of affordance and its implementation to the robotics
- Implemented the obstacle detection algorithm to LabView robotics kit

AWARD & EXTRACURRICULAR ACTIVITIES

The Ergonomics Society of Korea Capstone Competition, Second Prize **Korea**
Team Head Nov. 2012

- GPS-embedded Autonomous Campus Tour Vehicle: Ergonomic design and system configuration
- Developed control system and software using LabView
- Developed remote driving system using gyro sensor in smartphone
- Conducted ergonomic experiments and analyzed gathered data in case of the emergency condition

Graduate School of Design and Human Engineering, UNIST **Ulsan, Korea**
President Feb 2015–Aug 2015

Undergraduate school of Design and Human Engineering, UNIST **Ulsan, Korea**
Engineering & Systems Design track leader Apr 2011–Dec 2011

LANGUAGES & COMPUTER SKILLS

- English(fluent), Korean(native)
- Proficient in Python(including Django), Database(SQL), MATLAB, SAS, C#, LabView, and Linux(Ubuntu)
- Basic knowledge in Stata, Java, JavaScript, HTML and CSS
- Experience with jQuery, AWS, and Google cloud platform