

SEOK LEE

Deliver quality in uncertain environment:

Uncertainty is everywhere. In the engineering field, there are often no defined requirements or clear direction. Trial and error is a working way to discover the unknowns. I have learned and developed hands-on project management where uncertainty is the norm. Exposure to the research environment, where there's minimal guidance to demand creative outputs, fortifies me. In both sides of this field, I am able to deliver high quality, even where uncertainty rises and falls.

Leadership is meant to enable others:

Leadership is not something you can sandbox. It is a fail, improve, and repeat situation because human emotion is involved. You may end up with performance degradation adversity when leadership is exercised ineffectively. I envision leadership as the art of harmonizing humane emotion and efficient project delivery, simultaneously. My formal education in MBA has enabled me the ability to utilize my past learned leadership skills to enable others to achieve the group's career goal.

Solve complex problem:

My passion lies in developing solutions for complex systemic issues. The journey to prove the proposed solutions at system level is rewarding and that is when my professional ability shines.

Open minded in global setting:

Exposure to the global presence, working in the European region, enlightened me with a holistic view of corporate operation. It has enabled me to see why a one-size-fits-all strategy wouldn't work due to different labor resources, localities, and customs. Specializing in corporate globalization in MBA certainly broadens and affirms my collective view stemming from international assignments.

Experienced in data driven approach:

Acquiring insights from data is easier said than done. The data size is unwelcoming and overwhelming at first. Data mining is monotonous and tedious. Insufficient data requires long waiting and a change of the data acquisition method. Frustration can arise when the conclusive pattern or an insight is not seen. Unskillful coding and visualization will add stress to time demanding projects. However, the delight after discovering patterns or estimating / forecasting the next behavior helps to endure the hectic prep work. While going through both engineering and business analytic areas, I have achieved this experience.

A versatile in engineering field:

Following engineering specialties can be meshed in different disciplines:

- *Mathematical Modeling for System*
- *Data Analytic Driven Decision Making*
- *Virtual Simulation to Mimic Real World*
- *Design Estimator to Predict Nonlinearity*
- *Model Based Approach to Develop Readable and Simplified s/w Code*
- *AI, Vision Sensing for Pattern Recognition, Path Following*



CONTACT INFO

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TOOLS

Data analytics: R | Python |
MATLAB

Engineering: Simulink | CarSIM |
AMESim | Targetlink | CAN | C++ |
Tensorflow | OpenCV | Keras |
Unreal

LICENSE

Professional Engineer(Mechanical
Eng- Thermal & Fluid, MI license #
6201066645)

Udacity Self driving car
#5R7RH56H

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EDUCATION

10/2017–
08/2021

University of Illinois

MBA-Financial Mngt | Value chain Mngt | Managerial Economics & Business Analysis | Strategic leadership & Mngt | Business Analytics | Global Challenge in Business

📍 Urbana, IL

01/2005–
04/2010

University of Michigan

M.S. in Mechanical Engineering

📍 Dearborn, MI

1998–
2005

Korea Aerospace University

Bsc. in Mechanical Engineering

📍 Korea



INDUSTRY EXPERIENCE

06/2021–
present

Canoo

Senior Technical Team Lead - Electronics

📍 Torrance, CA, USA

- Upon graduating MBA, I wanted to explore a broader spectrum of vehicle integration work. I am interested in how a vehicle is designed, developed, tested, and launched. How a company constantly please consumers' eyes and pocket, but another fails to meet consumers' appetite.
- I also wanted to experience how a new company becomes an incumbent. Therefore, I chose to make a transition to a start-up.
- The day to day job includes, but is not limited to conducting engineering Electronic requirement definition for future products- Benchmark, initial market research, pinpoint technology gap, share insight, and set the roadmap for corporate ADAS, On Board Charger (OBC), telematics, V2X and infotainment strategy

04/2019–
06/2021

Ford Motor Company

Research Engineer- Driving Assist Technology

📍 Dearborn, MI, USA

- I developed interface to take ray tracing radar signals into vector transform to feed to the s/w for driving simulation. Later, I developed 3d scenes in urban parking using 3d gaming engine (aka Unreal).
- In the end, I integrated 3d scenes and developed a sensor interface to test out certain traffic scenarios (highway following) to test out various ECU controls s/w codes in vehicle system level.
- Before exit, I do demonstrate the s/w testing framework to other engineers for training purpose.

11/2015–
04/2019

● **Ford Motor Company**

Autonomous Chassis Controls Engineer

📍 Dearborn, MI, USA

- I tested in-house developed chassis controls s/w against requirement using MATLAB/Simulink tool. Later, I refactored the developed s/w to conform to ISO 26262 standard. Later, for testing purpose, I developed the simplified, but approximated mathematical models to run s/w code under real-time simulation framework.
- In the end, I managed to integrate refactored s/w into a driving simulation environment to conduct repetitive testing.
- This entire work received 3 Ford internal awards which led me to focus on more simulation work for my next move.

04/2014–
11/2015

● **Cummins Engine Company**

Diagnostic Team Leader

📍 Columbus, IN, USA

- I led a team of calibration engineers. The calibration contents are related to thermal management for controlling the catalytic events. I always looked for how to make our team better and thrive spontaneously by demonstrating leadership by example. I let team members taste different management styles - servant management.
- I provided training, coordinated vehicle/ engine testing works to meet the Euro environmental regulatory requirement while I conducted data mining, data analysis to check the calibration performance to approve quality contents in the field operation.

07/2011–
04/2014

● **Cummins Engine Company**

Technical Specialist

📍 Darlington, UK

- I worked in an international site in the UK as an expat after a Dutch assignment. I did diagnostics development work including s/w validation at vehicle level and calibration contents development to meet European emission regulations. The work also involved data mining and analysis of the large fleet data set.
- I led a team of engineers to maintain Hardware in the Loop (HiL) testing equipment. Before exit, I demonstrated the capability and its usefulness and readiness to validate s/w before conducting field or vehicle testing.

10/2007–
07/2011

● **Cummins Engine Company**

Senior Control Engineer

📍 Eindhoven, the Netherlands

- I started as a controls engineer which handled electronics integration work with an emphasis on harness design, ECU validation, and CAN (Controller Area Network) signal definition.
- I spent a handful of time for s/w validation and testing at HiL (Hardware in the Loop). This work was carried out at an international site, a Dutch truck company (DAF trucks, NV). I adapted cultural differences quickly while embracing and valuing Dutch culture to harmonize between two entities.



ACADEMIC RESEARCH EXPERIENCE

2005–
2010

Graduate Research Assistant

University of Michigan

📍 Dearborn, MI

- I came to the US for study abroad because I won full tuition supported research assistant scholarship to work on mathematical modeling and simulation in automotive application.
- Although the school is a regional school and relatively unknown to public, I did my best to produce a fruitful outcome.
- In the end, I was able to publish 2 papers and 1 technical report before graduation.



PUBLICATIONS

2008

Investigation of Sliding-Surface Design on the Performance of Sliding Mode Controller in Antilock Braking Systems

[IEEE Vehicular Technology, Volume 57 issue 2](#)

Taehyun Shim, Sehyun Chang, **Seok Lee**

2007

Technical report- Brake design and modeling of Low Mass Vehicle

[IAVS \(Institute of Advance Vehicle System\), University of Michigan-Dearborn](#)

Seok Lee

2006

Development of a Brake System for Lightweight Vehicle

[IMECE2006-15437, pp. 229-238; 10 pages](#)

Seok Lee, Taehyun Shim, Byung-Kwan Cho