Jong-Hyun PARK

Electro-Magnetic Design Engineer
Hyundai-Transys, **Electrical Powertrain System** (EPS) Engineering Design Team
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EDUCATION & RESEARCH EXPERIENCE

- *Electro-Magnetic Design Engineer* Jan. 2018 - Present

Hyundai-Transys, EPS Engineering Design Team
Main Job:
1) xEV Traction Motor Design and Analysis (Electro-magnetic & Structure FEM etc.)
2) Analysis of dynamic behavior of motor
3) 1-D thermal equivalent circuit through motor loss analysis
4) Motor characteristic simulation according to motor control (BLAC, SVPWM)

- *Master of Science in Automotive Engineering* *GPA 4.26 / 4.5* Mar. 2016 – Feb. 2018

Electro-Mechanical Computer Aided Design, University of Hanyang, Seoul, Korea
Supervisor: Prof. Dr. Jung-Pyo Hong
Research lab: Electro-Mechanical Computer Aided Design Lab (ECAD)

- *Wheel-Bearing Design Engineer* Jan. 2014 – Nov. 2016

ILJIN GLOBAL, Advanced Research Team
Main Job:
1) Automotive Wheel Bearing Design
2) Bearing Life Duration Analysis
3) Various types of design (Use a duralumin, Modularized knuckle, shaft and brake Disk)

- *Bachelor of Science in Automotive Engineering* *GPA 3.43 / 4.5* Mar. 2008 – Feb. 2014

University of Kookmin, Seoul, Korea

RESEARCH TOPIC

- xEV Traction Motor Design

  : In designing an xEV motor, I am interested in research that considers the electro-magnetic field, rotational stiffness, and thermal (loss). At the same time, motor control strategies are reflected in simulation to design excellent motors.

- Ultra-high speed Electric Machine

  : In designing the ultra-high speed Electric Machine, the optimal design was carried out in consideration of NVH and thermal (loss). In addition, Bending and twist mode frequencies are predicted and reflected in motor control strategies through rotor mode analysis.

PUBLICATION & CONFERENCE PROC.

1. **Jong-Hyun Park**, Kyung-Tae Jung, Young-Hoon Jung, Myung-Seop Lim, Myung-Hwan Yoon, Jung-Pyo Hong, and Jae-Woo Jung, "*Design and Verification for the Torque Improvement of a Concentrated Flux-Type Synchronous Motor for Automotive Applications,*" *IEEE Trans. Ind. Appl., vol. 55, pp. 3534–3543, Jul-Aug. 2019.* [Impact Factor: 3.488]

2. **Jong-Hyun Park**, Young-Hoon Jung, Myung-Hwan Yoon, Jung-Pyo Hong, "*Analysis of Electromagnetic Force according to the number of poles and slots for Ultra-high-speed permanent magnet synchronous motors,*" *2017 Korean Magnetics Society Winter Academic Research Presentation*, 79 - 82 (4 pages), Nov. 2017

3. **J. H. Park**, Y. H. Jung, K. T. Jung, M. H. Yoon, and J. P. Hong, "Torque density improvement of concentrated flux-type synchronous motor for automotive application," *in Proc. IEEE Int. Elect. Mach. Drives Conf.*,2017.

4. **Jong-Hyun Park**, Jae-Yui Kim, Dong-Min Kim, Jung-Pyo Hong, "*Optimum Design of Outer rotor SPMSM for Cogging Torque Reduction,*" *2016 Korean Society of Automotive Engineers Spring Conference*, 566 - 571 (6 pages), Mar. 2016.

5. [*Master's Thesis*] **Jong-Hyun Park**, "*2-D FEM Analysis of Concentrated Flux-type Synchronous Motor Considering Axial Leakage Flux,*" Hanyang Univ., Graduate School, Automotive Engineering, 2018.

PATENT

1. Hanyang Univ. (Jung-Pyo Hong, Dong-Gyun An, Jong-Hyun Park), Hyundai Mobis (Jae-Woo Jung, Ha-Min Jung), "Vehicle brake system," KOR. Patent Application, 10-2019-0091992, filed Jan. 30, 2018.

2. Sang-Ji Bang, Wan-Tae Kim, Jong-Hyun Park, "Wheel bearing and its manufacturing method," KOR. Patent Application, 10-2016-0136936, filed May. 21, 2015.

3. Jae-Myung Song, Wan-Tae Kim, Jong-Hyun Park, "Wheel bearing and its manufacturing method," KOR. Patent Application, 10-2017-0010688, filed Jul. 20, 2015.

SKILLS & ABILITIES

1. Electro-Magnetic FEM Tool: electro-magnetic field etc.

2. Structure FEM Tool: Structure, Rotational stiffness, Heat transfer, Mode Analysis etc.

3. MATLAB: Thermal equivalent circuit, Motor Drive Simulation (SVPWM), Dynamic Modeling etc.

4**. ROS1, Python**: ROS1 using Python, Simulation and Robot drive (Beginner)