

# YOUNGMOK YUN

yunyoungmok@gmail.com  
<https://sites.google.com/site/yunyoungmok/>

## Education

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M.S. 2006 ~ 2008	- Robotics Lab, Mechanical Engineering, Pohang University of Science and Technology (POSTECH, Ranked 28 <sup>th</sup> World Univ. by the Times) - Advisor : Prof. Wan Kyun Chung
B.S. 2002 ~ 2006	- Mechanical Engineering, POSTECH - Advisor : Prof. Wan Kyun Chung
High School 1999 ~ 2002	- Kyounggi Science High School (founded for special high students gifted in science and mathematics ) - Major : Physics

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## Work Experience

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Jul. 2011 ~ Present	- <b>Rehabilitation robot design for customized gait-motion generation</b> - Researcher, Korea Institute of Science and Technology (KIST) - Director: Dr. Changhwan Kim
Aug. 2010 ~ Present	- <b>3D environment reconstruction &amp; 3D SLAM based on plane feature</b> - Visiting Researcher, Robotics Lab., Electrical Engineering, Korea University - Advisor: Prof. Nakju Doh
2008 ~ Jul. 2011	- <b>Mechatronic system design and control for automobile system validation</b> - Assistant Researcher, Renault-Samsung Motors Technical Center - Involved in international Renault-Nissan chassis system platform design projects - Served military duty
2006 ~ 2007	- <b>Human-guided surgical robot system for spinal fusion surgery</b> - Robotics Lab., POSTECH - Project of Korean Ministry of Health and Welfare - Advisor: Prof. Wankyun Chung
2006 ~ 2007	- <b>Development of navigation and human-robot interaction techniques</b> - Robotics Lab., POSTECH - Project of Korean Ministry of Information and Communication - Advisor: Prof. Wankyun Chung
2004 ~ 2005	- <b>Tennis ball gathering robot using visual recognition</b> - Graduation project, Mechanical Engineering Dept., POSTECH
2005	- <b>Research internship</b> - Robotics Lab., POSTECH

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## Awards and Honors

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2004	-	Best presentation award in Industry-University co-work course, "Optimal Design and Analysis", SATTI (Samsung Advanced Technology Training Institute)
2001	-	Gold prize in Korea Physics Olympiad for high school student
2001	-	Winner of Korean web contents development contest
2000	-	Graduated, IPhO(International Physics Olympiad) summer school
2006 ~ 2007	-	POSTECH Fellowship for M.S. Course
2006	-	Teaching assistant, "System Control"
2006	-	Graduated Magna cum Laude
2004 ~ 2005	-	Hyogok Scholarship
2003 ~ 2004	-	Mentor Scholarship, "Physics"
2002	-	POSTECH Physics Contest Scholarship

## Paper

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- **Youngmok Yun**, S. Yeon, J. Kang, H. Choi, C. Jun, C. Kim and N. L. Doh, "Robust Data Association Algorithm with Application to the Plane Feature-based 3D SLAM," submitted on *IEEE Int. Conf. on Robotics and Automation*, 2012.
- Sooyong Yeon, C. Jun, H. Choi, J. Kang, **Youngmok Yun**, and N. L. Doh, "Robust-PCA based Hierarchical Plane Extraction with Application to 3D Geometric SLAM," submitted on *IEEE Int. Conf. on Robotics and Automation*, 2012.
- Sharifuddin Mondal, **Youngmok Yun**, and Wan Kyun Chung, "Terminal Iterative Learning Control for Calibrating Systematic Odometry Errors in Mobile Robots," *IEEE/ASME Int. Conf. on Advanced Intelligent Mechatronics*, 2010.
- **Youngmok Yun**, Byungjae Park, and Wan Kyun Chung, "Odometry Calibration using Home Positioning Function for Mobile Robot," *IEEE Int. Conf. on Robotics and Automation*, 2008.
- Sharifuddin Mondal, **Youngmok Yun**, and Wan Kyun Chung, "Calibration Technique for Odometry of Mobile Robots using Terminal Iterative Learning Control," *IEEE Int. Conf. on Ubiquitous Robots and Ambient Intelligence*, 2008.
- **Youngmok Yun**, Wan Kyun Chung, and Sang yep Nam, "Systematic Error Calibration of Mobile Robot using Home Positioning Function," *IEEE Int. Conf. on Ubiquitous Robots and Ambient Intelligence*, 2008.

## Patent

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- "Odometry Calibration Method using Home-positioning for Mobile Robot", Patent No. 2007-81585(Korea)
- "Equipment and Procedure for Dynamic Seat Displacement Measurement", On registration

## Activities

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2004	-	President of student council of Mechanical Engineering Dept., POSTECH
2004	-	Fellow of the board of student council, POSTECH
2008 ~ 2011	-	Rock band guitarist, Renault-Samsung Motors Technical Center
2008 ~ 2011	-	Tennis club member, Renault-Samsung Motors Technical Center
2004 ~ 2008	-	Volunteer staff, Soup kitchen community and Orphanage
2004 ~ 2008	-	Rock band member, POSTECH
	-	Two music albums released

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## Technical Skills

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Programming Language	-	Visual C++, Matlab, Visual Basic, VBA
CAD	-	Solidworks, Autocad, CATIA
Actuator	-	Servo motor, DC motor, Stepping motor, Hydraulic actuator, Pneumatic actuator, etc.
Sensor	-	Loadcell, Strain Gauge, Displacement sensor, Laser scanners (SICK, Hokuyo), Mono/Stereo Camera (Bumble bee), Sonar sensor, Gyro sensor, Optical sensor, Other many industrial sensors
Mobile Robot Platform	-	Pioneer 3 DX , Pioneer 3 AT
Control Interface	-	NI interface, MTS controller, Bosch controller
Others	-	Abundant mechatronic system design experience
	-	Abundant practical system control and tuning experience

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## Scores

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BS GPA	-	Total : 3.65/4.0 Major : 3.72/4.0
MS GPA	-	Total : 3.57/4.0 Major : 3.67/4.0
GRE	-	Verbal(700), Math(800), Writing(3.0)
TOEFL	-	Total : 97
	-	Reading(27), Listening(27), Speaking(19), Writing(24)

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## Reference

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### **Wan Kyun Chung** (wkchung@postech.ac.kr)

- Relation : Advisor professor for BS and MS programs in POSTECH
  - Professor, Dept. of Mechanical Engineering, POSTECH
  - Editor, IEEE Transaction on Robotics
  - San31, Hyojadong, Namgu, Pohang, Gyungbuk, 790-784, KORA
  - Tel: +82-54-279-2172, Fax: +82-54-279-5899
  - <http://rnb.postech.ac.kr>
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### **Nakju Lett Doh** (nakju@korea.ac.kr)

- Relation : Alumnus of Robotics Lab, POSTECH, Current advisor professor
  - Assistant Professor, School of Electrical Engineering, Korea University
  - Anam-dong, Seoul, 136-701, KOREA
  - Tel: +82-2-3290-4822
  - <http://urobot.korea.ac.kr/>
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### **Sanghee Cho** (sanghee.cho@renaultsamsungm.com)

- Relation : Boss of Renault-Samsung Motors Technical Center
  - Group chief, Chassis System Validation Group , R&D Division
  - Renault-Samsung Motors Technical Center
  - 447-4, Gongse-dong, Yongin-si 446-796, South Korea
  - Tel: +82-10-7360-0824
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### **Changhwan Kim** (chhwkim@gmail.com)

- Relation : Director of outdoor multi-robot team, KIST
  - Chief Researcher, Outdoor multi-robot team
  - Korea Institute of Science and Technology
  - Hwarangno 14-gil 5, Seongbuk-gu, Seoul 136-791, Republic of Korea
  - Tel: +82-10-6258-6948
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