

# *Il Yong Chun*

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**OBJECTIVE** To seek postdoctoral or full-time scientist position in the medical imaging system engineering, particularly in MRI and X-ray CT

**EDUCATION**

<b>Purdue University</b> Ph.D. Candidate in Electrical and Computer Engineering Advisors: Professor Thomas M. Talavage and Professor Ben Adcock	West Lafayette, IN, USA Aug. 2009 – Present
<b>Korea University</b> B.Eng. in Electrical Engineering	Seoul, South Korea Mar. 2002 – Feb. 2009
<b>The University of Hong Kong</b> Exchange Student in Electrical and Electronic Engineering	Hong Kong, China Aug. 2007 – May. 2008

**WORK EXPERIENCE**

<b>Purdue University</b> Research Assistant (advisor: Prof. Thomas M. Talavage) <ul style="list-style-type: none"><li>• Compressed sensing (CS) in MRI and X-ray CT</li><li>• Coil precoding in Multiple-input multiple-output (MIMO) MRI</li><li>• Image Analysis in Neuroimaging</li></ul> Teaching Assistant (advisor: Prof. Michael D. Zoltowski) <ul style="list-style-type: none"><li>• Signals and systems (ECE301)</li></ul> Research Assistant (advisor: Prof. Michael G. Heinz) <ul style="list-style-type: none"><li>• Template-based peak detection in auditory signal</li></ul>	West Lafayette, IN, USA Aug. 2010 – Present  Jan. 2011 – May 2011  Aug. 2011 – May 2013
<b>Samsung Advanced Institute of Technology (SAIT)</b> Graduate Intern (supervisor: Dr. Jung-Bae Kim) <ul style="list-style-type: none"><li>• Multi-modal (ultrasonography – MRI) image registration using multiple mutual information</li></ul>	Gyeonggi-do, South Korea Jun. 2013 – Jul. 2013
<b>Neuroscience Research Institute (NRI)</b> Research Intern and Lecturer (supervisor: Prof. Zang-Hee Cho) <ul style="list-style-type: none"><li>• Research: High-resolution positron emission tomography (PET) image reconstruction with sparsity regularization and structural image</li><li>• Lecture: An introduction to optimization</li></ul>	Incheon, South Korea May 2013 – Jun. 2013
<b>Intel Labs</b> Graduate Intern (supervisor: Dr. Willem M. Beltman) <ul style="list-style-type: none"><li>• Real-time frequency-domain blind source separation of convolutive speech mixtures using non-stationarity in mobile environment</li></ul>	Hillsboro, OR, USA May 2011 – Jul. 2011
<b>Gangnam-gu and Yeongdeungpo-gu District Office</b> Public Interest Service Personnel <ul style="list-style-type: none"><li>• Administrator for the traffic offense vehicle server and regulation system</li><li>• Computer engineer</li></ul>	Seoul, South Korea Jun. 2003 – Sep. 2005

## **PUBLICATION** Journal Articles

**Il Yong Chun**, Song Noh, David J. Love, Thomas M. Talavage, Stephen Beckley, and Sherman J. Kisner, “Coil precoding for LMMSE image reconstruction in MIMO SENSE MRI,” submitted to *IEEE Trans. Comput. Imag.*, Aug. 2015.

**Il Yong Chun**, Ben Adcock, and Thomas M. Talavage, “Efficient compressed sensing SENSE pMRI reconstruction with joint sparsity promotion,” submitted to *IEEE Trans. Med. Imag.*, Oct. 2014.

**Il Yong Chun**, Xianglun Mao, Eric L. Breedlove, Larry J. Leverenz, Eric A. Nauman, and Thomas M. Talavage, “DTI detection of longitudinal WM abnormalities due to accumulated head impacts,” *Dev. Neuropsychol.*, vol. 40, no. 2, pp. 92–97, May 2015.

## Conference Papers

Sumra Bari, **Il Yong Chun**, Larry J. Leverenz, Eric A. Nauman, and Thomas M. Talavage, “DTI detection of WM abnormalities using randomization test with complete and incomplete pairs,” in *Proc. 21<sup>st</sup> Org. for Hum. Brain Mapp. (OHBM)*, Honolulu, HI, Jun. 2015.

Ikbeom Jang, **Il Yong Chun**, Larry J. Leverenz, Eric A. Nauman, and Thomas M. Talavage, “DWI detection of WM abnormality and relation with collision events in high school athletes,” in *Proc. 21<sup>st</sup> Org. for Hum. Brain Mapp. (OHBM)*, Honolulu, HI, Jun. 2015.

Ikbeom Jang, **Il Yong Chun**, Larry J. Leverenz, Eric A. Nauman, and Thomas M. Talavage, “Robust detection of axonal abnormalities in high school collision-sport athletes: longitudinal single subject analysis,” in *Proc. 23<sup>rd</sup> Intl. Soc. Mag. Res. Med. (ISMRM)*, Toronto, ON, May 2015.

**Il Yong Chun**, Ben Adcock, and Thomas M. Talavage, “Efficient compressed sensing SENSE parallel MRI reconstruction with joint sparsity promotion and mutual incoherence enhancement,” in *Proc. 36<sup>th</sup> IEEE Eng. Med. Biol. Soc. (EMBS)*, Chicago, IL, Aug. 2014, pp. 2424–2427.

**Il Yong Chun**, Ben Adcock, and Thomas M. Talavage, “Non-convex compressed sensing CT reconstruction based on tensor discrete Fourier slice theorem,” in *Proc. 36<sup>th</sup> IEEE Eng. Med. Biol. Soc. (EMBS)*, Chicago, IL, Aug. 2014, pp. 5141–5144.

**Il Yong Chun**, Allan Diaz, Sijia Qiu, Larry J. Leverenz, Eric A. Nauman, and Thomas M. Talavage, “DTI detection of symptomatic and asymptomatic injury due to repetitive hit exposures,” *3<sup>rd</sup> IN Neuroimaging Symp.*, Bloomington, IN, Oct. 2013.

**Il Yong Chun** and Thomas M. Talavage, “Efficient compressed sensing statistical X-ray/CT reconstruction from fewer measurements,” in *Proc. 12<sup>th</sup> Intl. Mtg. on Fully 3D Image Recon. in Rad. and Nuc. Med. (Fully 3D)*, Lake Tahoe, CA, Jun. 2013, pp. 30–33.

**Il Yong Chun**, Allan Diaz, Xiaodong Li, Yun Jang Jin, Larry J. Leverenz, Eric A. Nauman, and Thomas M. Talavage, “DTI detection of symptomatic and asymptomatic injury due to repetitive head blows,” in *Proc. 19<sup>th</sup> Org. for Hum. Brain Mapp. (OHBM)*, Seattle, WA, Jun. 2013.

**Il Yong Chun** and Thomas M. Talavage, “Fast non-convex statistical compressed sensing MRI reconstruction based on approximated  $L_p(0 < p < 1)$ -quasi-norm with fewer measurements than using  $L_1$ -norm,” in *Proc. 21<sup>st</sup> Intl. Soc. Mag. Res. Med. (ISMRM)*, Salt Lake City, UT, Apr. 2013.

**Il Yong Chun** and Thomas M. Talavage, “Edge-preserving non-iterative MAP SENSE MRI reconstruction,” in *Proc. 21<sup>st</sup> Intl. Soc. Mag. Res. Med. (ISMRM)*, Salt Lake City, UT, Apr. 2013.

**Il Yong Chun** and Thomas M. Talavage, “Sparse Tikhonov-regularized SENSE MRI reconstruction,” in *Proc. 21<sup>st</sup> Intl. Soc. Mag. Res. Med. (ISMRM)*, Salt Lake City, UT, Apr. 2013.

**Il Yong Chun**, Allan Diaz, Yun Jang Jin, Xiaodong Li, Larry J. Leverenz, Eric A. Nauman, and Thomas M. Talavage, “Robust detection of progressive white matter abnormalities in mTBI using DW-MRI,” in *Proc. 21<sup>st</sup> Intl. Soc. Mag. Res. Med. (ISMRM)*, Salt Lake City, UT, Apr. 2013.

<b>HONORS AND AWARDS</b>	<b>Travel Funds for Purdue Engineering Ph.D. Candidates</b> , Purdue Univ.	Sep. 2014
	<b>Travel Funds</b> , 12 <sup>th</sup> Fully 3D	Jun. 2013
	<b>Magna Cum Laude Merit Award</b> , 21 <sup>st</sup> ISMRM	Apr. 2013
	<b>Award of Trainee (Educational) Stipend</b> , 21 <sup>st</sup> ISMRM	Apr. 2013
	<b>Semester High Honor</b> , Korea Univ.	Dec. 2005 – Jun. 2007
	<b>Honors Scholarship</b> , Korea Univ.	Feb. 2006 – Aug. 2007
<b>ACTIVITIES</b>	<b>Purdue Electrical Engineering Korean Association (PEEKA)</b> Vice President	Purdue Univ. Aug. 2011 – Aug. 2012
	<b>Academic Society of Communication Engineering</b> President	Korea Univ. Mar. 2006 – Jun. 2007
<b>VISA STATUS</b>	F-1	
<b>MILITARY SERVICE</b>	Republic of Korea Army	Seoul, South Korea
	Private (Mandatory in South Korea)	Jun. 2003 – Sep. 2005

**COMPUTER  
SKILL**

MATLAB, C, and C++