

## **Suhyung Park** *Postdoc. Fellow, Dr.*

Center for Neuroscience Imaging Research, Institute for Basic Science (IBS)  
Sungkyunkwan University, Suwon, Republic of Korea  
suhyung.park@gmail.com

### **MAJOR RESEARCH INTERESTS**

The main objective of my research is to develop novel methodologies in magnetic resonance imaging, particularly focusing on image reconstruction algorithms as well as physics-based pulse sequences for various applications. Specific research interests are: 1) Simultaneous multi-slice (SMS) imaging, 2) Compressed sensing and parallel MRI, 3) Dynamic imaging including functional MRI, CEST (Chemical exchange saturation transfer), and dynamic contrast-enhanced angiography, and 4) Technical challenges at high magnetic field.

### **EDUCATION**

Ph. D.	Department of Brain and Cognitive Engineering (Medical Imaging), Korea University, Seoul, Dissertation: Accelerated Magnetic Resonance Imaging From Incomplete Measurements (Advisor: Dr. Jaeseok Park), 2011~2015
M.S.	Department of Medical Science, Yonsei University, Seoul Dissertation: Adaptive Self-Calibrating Parallel Magnetic Resonance Imaging using Kalman Filter (Advisor: Dr. Jin Suck Suh), 2009~2010
B.S.	Department of Mechanical Engineering, Hanyang University, Seoul, 2001~2008

### **EXPERIENCES**

- Postdoctoral Fellow in Center for Neuroscience Imaging Research (CNIR) in Sungkyunkwan University (Advisor: Dr. Jaeseok Park), 2015~ present
- General Electric (GE) Healthcare: Summer Research Internship in Applied Science Laboratory-west (Advisor: Dr. Peng Lai), Menlo Park, California, USA, 2014
- Research Assistant in Biomedical Imaging and Engineering Laboratory, Department of Brain and Cognitive Engineering, Korea University, 2013~2015
- Graduate Teaching Assistant (Introduction to Medical Imaging taught by Professor Jaeseok Park), Department of Brain and Cognitive Engineering, Korea University, 2011

### **SCIENTIFIC SOCIETIES AND ORGANIZATIONS**

- Adhoc Reviewer for Magnetic Resonance in Medicine

- Adhoc Reviewer for Journal of Magnetic Resonance Imaging
- Reviewer for Biomedical Signal Processing & Control, 2014 ~ present
- Reviewer for Biomedical Engineering Letters, 2014 ~ present
- Member of International Society for Magnetic Resonance in Medicine (ISMRM), 2009 ~ present
- Member of Korean Society of Magnetic Resonance in Medicine (KSMRM), 2009 ~ present

## HONORS AND AWARDS

- Student Stipend Awards, International Society for Magnetic Resonance in Medicine (ISMRM), 2011-2013
- The Best Graduate Student Paper Awards (2 Place Best Paper Award), College of Information and Communication, Korea University, 2014
- The Best Post Awards in International Symposium on Brain and Cognitive Engineering, 2011
- World Class University (WCU) Program Scholarship (Ph. D., Korea University), 2011 ~ 2012
- Brain Kora 21 Scholarship (M.S., Yonsei University), , 2009 ~ 2010
- Superior Academic Scholarship (B.S., Hanyang University), 2005 ~ 2007

## PEER-REVIEWED JOURNALS

- **Suhyung Park**, Eung-Yeop Kim, Jaeseok Park\*, “Dynamic Contrast-Enhanced MR Angiography Exploiting Subspace Projection for Robust Angiogram Separation”, 2016, submitted.
- **Suhyung Park**, Jaeseok Park\*, “SMS-HSL: Simultaneous Multi-Slice Aliasing Separation Exploiting Hankel Subspace Learning”, 2016, in revision.
- **Suhyung Park**, Jaeseok Park\*, “Accelerated Dynamic Cardiac MRI Exploiting Sparse-Kalman-Smoother Self-Calibration and Reconstruction (k-t SPARKS)”, Physics in Medicine and Biology, 2015; 60(9):3655-71.
- **Suhyung Park**, Jaeseok Park\*, “Compressed Sensing MRI Exploiting Complementary Dual Decomposition”, Medical Image Analysis, 2014, 18(3):472-86.
- **Suhyung Park**, Jaeseok Park\*, “Adaptive Self-Calibrating Iterative GRAPPA”, Magnetic Resonance in Medicine, 2012; 67(6):1721-9.
- Jaeseok Park\*, **Suhyung Park**, Eung Yeop Kim, “Phase-Sensitive Dual-Acquisition Single-Slab 3D Turbo Spin Echo Imaging: Application to Whole-Brain Fluid-Attenuated Imaging”, Magnetic Resonance in Medicine, 2010; 63(5):1422-30.

## PEER-REVIEWED CONFERENCE PROCEEDINGS

- **Suhyung Park**, Sugil Kim, Jaeseok Park, “Simultaneous Multi-Slice Spiral-CEST Encoding with Hankel Subspace Learning: ultrafast whole-brain z-spectrum acquisition”, 24<sup>th</sup> ISMRM, Submitted.
- **Suhyung Park**, Eung Yeop Kim, Jaeseok Park, “Dynamic Contrast-Enhanced MRA with Robust Background Suppression Exploiting Motion Subspace Learning and Sparsity Priors”, 24<sup>th</sup> ISMRM, Submitted.
- **Suhyung Park**, Jaeseok Park, “SMS-HSL: Simultaneous Multi-Slice Aliasing Separation Exploiting Hankel Subspace Learning”, 24<sup>th</sup> ISMRM, Submitted.
- **Suhyung Park**, Eung Yeop Kim, Jaeseok Park, “Dual Projected Background Nulling Compressed Sensing for Robust Separation of Dynamic Contrast-Enhanced Angiograms, 23<sup>rd</sup> ISMRM, Toronto, Canada, 2015.
- **Suhyung Park**, Jaeseok Park, “k-t SPARKS: Dynamic Parallel MRI Exploiting Sparse Kalman Smoother, 23<sup>rd</sup> ISMRM, Toronto, Canada, 2015.
- **Suhyung Park**, Jaeseok Park, “Compressed Sensing MRI Exploiting Complementary Dual Decomposition”, 22<sup>nd</sup> ISMRM, Milan, Italy, 2014.
- **Suhyung Park**, Jaeseok Park, “Highly Accelerated Dynamic Parallel MRI Exploiting Constrained State-Space Model with Low Rank and Sparsity”, 22<sup>nd</sup> ISMRM, Milan, Italy, 2014.
- **Suhyung Park**, Jaeseok Park, “Multi-Scale Weighted Partially Parallel Imaging”, 21<sup>st</sup> ISMRM, Utah, USA, 2013.
- **Suhyung Park**, Jaeseok Park, “Optimal Combination of High Frequency Sub-band Compressed Sensing and Parallel Imaging: Consideration of Local and Global Characteristics of k-space” 20<sup>th</sup> ISMRM, Melbourne, Australia, 2012.
- **Suhyung Park**, Jaeseok Park, “Generalized High-Pass-Filtered GRAPPA Reconstruction”, 20<sup>th</sup> ISMRM, Melbourne, Australia, 2012.
- Hyuneol Lee, **Suhyung Park**, Jaeseok Park, “Dual-Echo Single-Slab 3D Turbo Spin Echo Imaging for Highly Efficient Sub-Millimeter Whole-Brain Gray Matter Imaging, 20<sup>th</sup> ISMRM, Melbourne, Australia, 2012.
- **Suhyung Park**, Jaeseok Park, “Adaptive Self-Calibrating in k-Space Parallel Magnetic Resonance Imaging using the Kalman Filter”, 19<sup>th</sup> ISMRM, Montreal, Canada, 2011.
- Hahnsung Kim, **Suhyung Park**, Donghyun Kim, Jaeseok Park, “Variable Flip Angle Single-Slab 3D GRASE with Phase-Independent Image Reconstruction, 19<sup>th</sup> ISMRM, Montreal, Canada, 2011.

## PATENTS

- **Suhyung Park**, Jaeseok Park, Method and Apparatus for Real-time Dynamic Parallel MRI, Republic of Korea; DP-2014-0028
- **Suhyung Park**, Jaeseok Park, Method and Apparatus for Feature-Optimized Compressed Sensing MRI, Republic of Korea/USA; DP-2014-0036
- **Suhyung Park**, Jaeseok Park, Method and Apparatus for Magnetic Resonance Image

Processing, Republic of Korea; No. 10-2013-0035579

- **Suhyung Park**, Jaeseok Park, Multi-Coil based Composite Convolution Interpolation using Multiple High Pass Filters and a Single Low Pass Filter, Republic of Korea; No. 10-2012-0049779, US 20130301891 A1
- **Suhyung Park**, Jaeseok Park, Each Coil Convolution Interpolation using Multiple High Pass Filters and a Single Low Pass Filter, Republic of Korea; No. 10-2012-0049780, US 20130300413 A1
- **Suhyung Park**, Jaeseok Park, Method and Apparatus of Constrained Frequency Domain Reconstruction, Republic of Korea; No. 10-2012-0039964
- **Suhyung Park**, Jaeseok Park, Method and Apparatus of Adaptive Self-Calibrating Multi-Coil Parallel Magnetic Resonance Imaging, Republic of Korea/PCT; No. 10-2010-0088394

### **Patent Transfer to Industry**

- Scimedix: Method and Apparatus of Adaptive Self-Calibrating Multi-Coil Parallel Magnetic Resonance Imaging; Republic of Korea/PCT; No. 10-2010-0088394; License Fee: 500,000 +  $\alpha$  US Dollars