

# SUNGKWANG MUN

PhD

Center for Advanced Vehicular Systems  
Mississippi State University, USA

## PERSONAL

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📄 Google Scholar

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🌐 LinkedIn

## EDUCATION

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### Ph.D. in Electrical & Computer Engineering

*Aug. 2007 - Dec. 2012*

*Mississippi State University, Starkville, MS — GPA 3.72/4.00 (42 credits)*

Thesis: “Block Compressed Sensing of Images and Video”

Advisor: Dr. James E. Fowler

### B.S. in Computer Engineering

*Mar. 2000 - Dec. 2002, Mar. 2005 - May 2007*

*KwangWoon University, Seoul, South Korea — GPA 3.00/4.00 (117 credits)*

Study Area: Digital Image Processing (Motion Detection)

Advisor: Dr. Sungwon Lee

Exchange Student in Electrical & Computer Engineering

*Aug. 2006 - May 2007*

*Mississippi State University, Starkville, MS — GPA 3.80/4.00 (30 credits)*

## WORK EXPERIENCE

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### Postdoctoral Researcher

*June 2014 - Present*

*Center for Advanced Vehicular Systems, Mississippi State, USA*

Performing a research about atomic simulation for polymer. Developing a software tool to automate the process of the parametrization of the model to the physical property.

Supervisor: Dr. Mark F. Horstemeyer

### Intermittent Researcher

*January 2014 - June 2014*

*Agricultural and Biological Engineering Dept., Mississippi State, USA*

Conducted a research by modeling and verifying the uncertainty of water irrigation system in Mississippi delta area.

Supervisor: Dr. Rajkumar Prabhu

### Teaching Assistant

*August 2010 - December 2012*

*Electrical and Computer Engineering Dept., Mississippi State, USA*

Taught 60 - 120 students in the Digital Device lab. Assisted instructor to develop lab materials effective for the large classroom environment by writing comprehensive lab manuals, reports, on-line quizzes, and auxiliary programs.

Supervisor: Jane Moorhead

### Research Assistant

*August 2008 - July 2010*

*Geo systems Research Institute, Mississippi State, USA*

Performed a research about image compression/restoration, specifically compressed sensing. Developed the simulation code related to the research. The codes are available at <http://www.ece.msstate.edu/~fowler/BCSSPL/>

Supervisor: Dr. James Fowler

**Research Assistant***January 2008 - July 2008**Department of Mathematics and Statistics Dept., Mississippi State, USA*

Performed a research about numerical analysis

Supervisor: Dr. Seongjai Kim

**Consultant & Marketer***Jun. 2004 - Nov. 2004**Sisa Education Company, Seoul, South Korea*

Dispatched classified documents to other command headquarters.

**Soldier***Mar. 2002 - Apr. 2004**Republic of Korea Army, Seoul, South Korea*

Assisted administration of the Test of English for International Communication (TOEIC) at middle and high school.

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**PUBLICATIONS****Refereed Journal Articles**

- [1] A.M. Schmidt N. Lee M. C. Wadsworth B. Rice J.Q. Corbitt J. Pote R. Prabhu S. Mun, G.F. Sassenrath, "Uncertainty analysis of an irrigation scheduling model for water management in crop production," *Agricultural Water Management*, 2015, under review
- [2] James E. Fowler, Sungkwang Mun, and Eric W. Tramel, "Block-based compressed sensing of images and video," *Foundations and Trends in Signal Processing*, vol. 4, no. 4, pp. 297–416, March 2012

**Refereed Conference Papers**

- [1] Sungkwang Mun and James E. Fowler, "Motion compensated compressed sensing for dynamic MRI," in *Proceedings of the International Conference on Image Processing*, Melbourne, Australia, September 2013
- [2] Sungkwang Mun and James E. Fowler, "DPCM for quantized block-based compressed sensing of images," in *Proceedings of the European Signal Processing Conference*, Bucharest, Romania, August 2012
- [3] James E. Fowler, Sungkwang Mun, and Eric W. Tramel, "Multiscale block compressed sensing with smoother projected Landweber reconstruction," in *Proceedings of the European Signal Processing Conference*, Barcelona, Spain, August 2011, pp. 564–568
- [4] Sungkwang Mun and James E. Fowler, "Residual reconstruction for block-based compressed sensing of video," in *Proceedings of the Data Compression Conference*, James A. Storer and Michael W. Marcellin, Eds., Snowbird, UT, March 2011, pp. 183–192
- [5] Sungkwang Mun and James E. Fowler, "Block compressed sensing of images using directional transforms," in *Proceedings of the International Conference on Image Processing*, Cairo, Egypt, November 2009, pp. 3021–3024

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**SKILLS****Programming:** C/C++/Objective C, Fortran, Python, Verilog, Matlab,  $\text{\LaTeX}$ , HTML/CSS, Java, GTK, QT**Operating Systems:** Windows, Linux, UNIX**Language:** English, Korean

## SERVICES

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### Web Administrator

- *Korean Student Association, Mississippi State University* Aug. 2008 - Present  
Created and maintaining the web site, <http://ksa-msu.com>
- *Starkville Korean Church, Starkville, Mississippi* Jan. 2010 - Present  
Created and maintaining the web site, <http://skpc.us>
- *The Society for the Advancement of Creation Science, Mississippi State University* Mar. 2013 - Present  
Created and maintaining the web site, <http://sacs.org.msstate.edu>

### Graduate Ambassador

Electrical and Computer Engineering, *Mississippi State University* Aug. 2008 - Dec. 2012  
Assisting the prospective especially international students for admission for the graduate program.

### Vice President

*Korean Student Association, Mississippi State University* Aug. 2008 - May. 2009, Aug. 2010 - May 2011

Planned yearly plan and budget for the organization, and helped the exchange students, transferred students, and visiting professors settle down.

## HONORS AND AWARDS

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Research Assistantship, *Geo systems Research Institute* Fall 2008 - Summer 2010, Summer 2011,12  
Scholarship, *Kwangwoon University, Seoul* Fall 2005  
Excellent Military Prize, *Information School, Republic of Korea Army* May 2002

## REFERENCES

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Dr. Mark F. Horstemeyer: [mfhorst@me.msstate.edu](mailto:mfhorst@me.msstate.edu), +1 (662) 325-7308  
Dr. James E. Fowler: [fowler@ece.msstate.edu](mailto:fowler@ece.msstate.edu), +1 (662) 325-3640  
Dr. Rajkumar Prabhu: [praj@cavs.msstate.edu](mailto:praj@cavs.msstate.edu), +1 (662) 325-8584  
Mrs. Jane Moorhead: [janem@ece.msstate.edu](mailto:janem@ece.msstate.edu), +1 (662) 325-2096