

# KIRAK HONG

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INTERESTS Distributed Stream Analytics, Parallel/Distributed Programming Model, Situation Awareness Applications

EDUCATION Ph.D., Computer Science, Expected May 2014; GPA: 3.7 / 4.0  
Advisor: Professor Umakishore Ramachandran  
College of Computing  
Georgia Institute of Technology, Atlanta, GA

B.S., Computer Science, June 2009; GPA: 4.22 / 4.3  
Advisor: Professor Bernd Burgstaller  
School of Engineering  
Yonsei University, Seoul, Korea

SKILLS Languages  
*Proficient in* C, C++, Java, Linux shell scripts, TinyOS  
*Familiar with* Assembly, X10, Matlab

Libraries and Tools  
*Proficient in* GDB, Eclipse, MPI, ActiveMQ, OpenCV, Boost  
*Familiar with* Visual Studio, OpenMP, Qt

RESEARCH EXPERIENCE Graduate Research Assistant **Georgia Institute of Technology**  
*Embedded Pervasive Laboratory, Atlanta, GA* August 2009 – Present  
Designing programming and execution model for large scale situation awareness applications.  
Developing a programming abstraction for target-centric applications.

Visiting Student **UC Berkeley**  
*UCB Robotics Lab, Berkeley, CA* May 2008 – August 2008  
November 2008 – February 2009  
May 2010 – August 2010  
Developed network stack/API for low bandwidth wireless camera platform.  
Developed collection tree protocol for wireless camera network.  
Studied efficient object recognition using multiple cameras.

Undergraduate Research Assistant **Yonsei University**  
*Seoul, Korea* November 2007 – May 2008  
February 2009 – August 2009  
Developed type-based libraries with compile-time optimization for streaming applications.  
Developed mixed mode execution virtual machine for embedded devices.

PROFESSIONAL EXPERIENCE	<p>Research Intern <i>Networked Systems Team, Basking Ridge, NJ</i> Developed a prototype of online meeting solution for dynamic supports. Researched user management issues in video-based online meeting system.</p> <p>Software Engineer Intern <i>Seoul, Korea</i> Developed distributed focused blog crawler for market research</p>	<p><b>Avaya Labs</b> <i>May 2011 – August 2011</i></p> <p><b>Daum Software</b> <i>May 2007 – August 2007</i></p>
SELECTED CONFERENCE AND JOURNAL PUBLICATIONS	<ul style="list-style-type: none"> <li>[1] Umakishore Ramachandran, <b>Kirak Hong</b>, Liviu Iftode, Ramesh Jain, Rajnish Kumar, Kurt Rothermel, JunSuk Shin, and Raghupathy Sivakumar. Large-scale situation awareness with camera networks and multimodal sensing. <i>Proceedings of the IEEE</i>, 100(4):878–892, 2012.</li> <li>[2] Phoebus Chen, <b>Hong, Kirak</b>, Nikhil Naikal, Shankar Sastry, Doug Tygar, Posu Yan, and Allen Yang. A low-bandwidth camera sensor platform with applications in smart camera networks. <i>Transactions on Sensor Networks</i>, 2012.</li> <li>[3] <b>Hong, Kirak</b>, Stephen Smaldone, Junsuk Shin, David Lillethun, Liviu Iftode, and Umakishore Ramachandran. Target container: A target-centric parallel programming abstraction for video-based surveillance. In <i>Fifth International Conference on Distributed Smart Cameras (ICDSC '11)</i>, 2011.</li> <li>[4] <b>Hong, Kirak</b>, Jiin Park, Sungho Kim, Taekhoon Kim, Hwangho Kim, Bernd Burgstaller, and Bernhard Scholz. Tinyvm: an energy-efficient execution infrastructure for sensor networks. <i>Software: Practice and Experience</i>, 2011.</li> <li>[5] Jingun Hong, <b>Hong, Kirak</b>, Bernd Burgstaller, and Johann Bliederger. Streampi: a stream-parallel programming extension for object-oriented programming languages. <i>The Journal of Supercomputing</i>, pages 1–23, 2011. 10.1007/s11227-011-0656-7.</li> <li>[6] Jingun Hong, <b>Hong, Kirak</b>, Bernd Burgstaller, and Johann Bliederger. Adastreams: A type-based programming extension for stream-parallelism with ada 2005. In Jorge Real and Tullio Vardanega, editors, <i>Reliable Software Technology Ada-Europe 2010</i>, volume 6106 of <i>Lecture Notes in Computer Science</i>, pages 208–221. Springer Berlin / Heidelberg, 2010.</li> </ul>	
POSTERS AND TECHNICAL REPORTS	<ul style="list-style-type: none"> <li>[1] <b>Hong, Kirak</b>, Jiin Park, Taekhoon Kim, Sungho Kim, Hwangho Kim, Yousun Ko, Jongtae Park, Bernd Burgstaller, and Bernhard Scholz. Tinyvm, an efficient virtual machine infrastructure for sensor networks. In <i>Proceedings of the 7th ACM Conference on Embedded Networked Sensor Systems, SenSys '09</i>, pages 399–400, New York, NY, USA, 2009. ACM.</li> <li>[2] <b>Hong, Kirak</b>, Posu Yan, P. Chen, S. Sastry, and Songhwai Oh. Poster abstract: Multihop routing in camera sensor networks - an experimental study. In <i>Information Processing in Sensor Networks, 2009. IPSN 2009. International Conference on</i>, pages 381 –382, april 2009.</li> </ul>	
AWARDS AND HONORS	<p>The Korea Foundation for Advanced Studies, Fellowship for Ph.D., 2009 Doung-Bu Foundation, Fellowship for B.S., 2007</p>	