

# Chang Hwan Peter Kim

## Curriculum Vitae

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Ph.D. Student  
Department of Computer Science  
University of Texas at Austin, USA

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### RESEARCH INTERESTS

Topics in software engineering that aim to automate software development and make programs more reliable.

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### EDUCATION

- Ph.D. Student  
Department of Computer Science  
University of Texas at Austin, USA  
January 2008 – Present  
GPA: 4.00  
Primary advisor: Professor Don Batory. Also advised by Professor Sarfraz Khurshid
- Combined Bachelor and Master of Applied Science (BASc. and MASc.)  
Department of Electrical and Computer Engineering  
University of Waterloo, Canada  
Sept. 2000 – June 2006
  - An accelerated program for obtaining a thesis-oriented master's degree in 1 year rather than 2
  - MASc., June 2005 – June 2006. GPA: 93.4% (4.00). Advisor: Professor Krzysztof Czarnecki
  - BASc. in Honours, Computer Engineering. Sept. 2000 – June 2005 (5-year program). GPA: 85.3% (3.73). Graduated "With Distinction"

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### PUBLICATIONS

#### *Refereed journal/magazine publications*

- K. Czarnecki, M. Antkiewicz, and C. H. P. Kim. Multi-Level Customization in Application Engineering. Communications of the ACM (CACM), Volume 49, Issue 12, December, 2006. Available at <http://portal.acm.org/citation.cfm?doid=1183236.1183267>

#### *Refereed conference publications*

- C. H. P. Kim, D. Batory, and S. Khurshid. Reducing Combinatorics in Testing Product Lines. To Appear in Aspect Oriented Software Development (AOSD 2011). Draft available as a UT-Austin CS Technical Report TR-10-02, January 2010 at <http://www.cs.utexas.edu/~chpkim/chpkim-productline-testing.pdf>
- C. H. P. Kim, E. Bodden, D. Batory, and S. Khurshid. Reducing Configurations to Monitor in a Software Product Line. In Runtime Verification (RV 2010). LNCS. Available at <http://www.cs.utexas.edu/~chpkim/chpkim-rv2010.pdf>
- C. H. P. Kim, D. Batory, and S. Khurshid. Eliminating Products to Test in a Software Product

Line (Short Paper). In Automated Software Engineering (ASE 2010). ACM. Available at <http://www.cs.utexas.edu/~chpkim/chpkim-ase10-short.pdf>

- C. H. P. Kim, C. Kaestner, and D. Batory. On the Modularity of Feature Interactions. In Generative Programming and Component Engineering (GPCE 2008), Nashville, Tennessee, USA. ACM. Available at <http://www.cs.utexas.edu/~chpkim/GPCE36-Kim.pdf>
- K. Czarnecki, C. H. P. Kim, and K. T. Kalleberg. Feature models are Views on Ontologies. In Software Product Line Conference (SPLC 2006), Baltimore, Maryland, USA, August 21-24, 2006, IEEE CS. Available at <http://www.cs.utexas.edu/~chpkim/splc06.pdf>
- C. H. P. Kim and K. Czarnecki. Synchronizing Cardinality-Based Feature Models and Their Specializations. In European Conference on Model Driven Architecture: Foundations and Applications (ECMDA 2005), Nuremberg, Germany. LNCS 3748. Available at <http://www.cs.utexas.edu/~chpkim/ECMDA05-FeatureModeling.pdf>

#### *Refereed workshop publications*

- C. H. P. Kim, K. Czarnecki, and D. Batory. On-Demand Materialization of Aspects for Application Development. In 6<sup>th</sup> Workshop on Software Engineering Properties of Languages and Aspect Technologies (SPLAT 2008), co-located with AOSD 2008. Available at <http://www.cs.utexas.edu/~chpkim/chpkim-materializable-splat08.pdf>.
- K. Czarnecki and C. H. P. Kim. Cardinality-based feature modeling and constraints: a progress report. In Workshop on Software Factories (co-located with OOPSLA 2005), San Diego, USA, October 16-20, 2005. Available at <http://www.cs.utexas.edu/~chpkim/softwareFactories05.pdf>

#### *Edited volumes*

- B. Berenbach and C. H. P. Kim (editors). Proceedings of the First international Workshop on Requirements Engineering Visualization (REV 2006), held with IEEE Requirements Engineering (RE 2006), September 11, 2006, IEEE Digital Library. Available at <http://ieeexplore.ieee.org/xpl/tocresult.jsp?isnumber=4026780&isYear=2006>

#### *Posters and demonstrations*

- K. Czarnecki, M. Antkiewicz, C. H. P. Kim, S. Lau and K. Pietroszek. fmp and fmp2rsm: Eclipse Plug-Ins for Modeling Features Using Model Templates. In OOPSLA'05 Companion, OOPSLA 2005, San Diego, USA, Oct 16-20, 2005. Available at <http://www.cs.utexas.edu/~chpkim/de23-czarnecki.pdf>
- K. Czarnecki, M. Antkiewicz, C. H. P. Kim, S. Lau and K. Pietroszek. Model-Driven Software Product Lines. In OOPSLA'05 Companion, OOPSLA 2005, San Diego, USA, Oct 16-20, 2005. Available at <http://www.cs.utexas.edu/~chpkim/pp46-czarnecki.pdf>

#### *Thesis*

- Master of Applied Science (MAsc): "On the Relationship between Feature Models and Ontologies", available at <http://www.cs.utexas.edu/~chpkim/chpkim-masc-thesis.pdf>

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## **PROFESSIONAL ACTIVITIES**

- Publicity Chair for GPCE 2011
- Reviewer for ASE Journal 2010, IEEE Transactions on Software Engineering 2008
- External reviewer for ASE 2011, GPCE 2010, OOPSLA 2009, ASE 2009, and ECOOP 2009.
- Co-Chair, Workshop on Requirements Engineering Visualization (REV2006) held with IEEE

Requirements Engineering (RE) 2006 International Conference, Minnesota, September 11-15, 2006. <http://swen.uwaterloo.ca/~chpkim/re06>

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## AWARDS AND ACHIEVEMENTS

- National Sciences and Engineering Research Council of Canada (NSERC) Postgraduate Scholarship (PGS D-3) Doctoral Award (\$63,000). Held at the University of Waterloo from May 2006 – December 2007. Held at the University of Texas at Austin from September 2009 – December 2010.
- Ontario Graduate Scholarship (OGS) (\$15,000 for 2005-2006)
- University of Waterloo President's Scholarship, top-up for NSERC/OGS (\$40,000 for 2005 – 2009)
- NSERC Undergraduate Student Research Award in Universities (\$4,000 for 2004 September - December)
- Queen Elizabeth II Aiming for the Top Tuition Scholarship (\$14,000 for 2000 – 2006)
- Governor General's Academic Medal for achieving the highest academic standing in the graduating class of high school (W.L. Mackenzie C.I., Downsview, Ontario, 2000)

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## WORK EXPERIENCE

SciComp, Inc. 2010 June  
Austin, TX, USA  
Part-Time Contractor  
- Developed support for a domain-specific language for scientific computing

NASA Ames Research Center 2009 May – August  
Moffett Field, CA, USA  
Research Intern  
- An intern in Robust Software Engineering Group, Intelligent Systems Division. Worked on code certification under the mentorship of Dr. Ewen Denney. Employed by Mission Critical Technologies (MCT), Inc.

The University of Texas at Austin 2011 January – May (392F)  
Austin, TX, USA 2008 September – December (CS371S)  
Teaching Assistant for  
Feature-Oriented Programming (392F)  
Object-Oriented Software Development (CS371S)  
- Helped the instructor with lecture- and project-related tasks

University of Waterloo 2007 Jan – April  
Waterloo, ON, Canada 2006 May – August  
Teaching Assistant for 2005 May – August  
Software Architecture and Design  
(ECE452/SE464/CS446),  
Software Engineering (ECE355)  
- Helped the instructor with lecture- and project-related tasks

- IBM *2003 September – December*  
Markham, ON, Canada *2003 January – April*  
DB2 Tools Software Developer *2002 May – August*  
*2001 September – December*
- Involved in the development of DB2 Universal Database (UDB) Query Patroller; worked on most aspects including database architecture, command line interface, Query Patroller Center, security features, and national language support
  - Involved in the development of DB2 UDB Control Center, the central point of database administration; worked on numerous user interface and middle-layer components
  - Developed a wizard tool that clones OS/390 subsystems using JCL
  - Performed object-oriented functional and system-level tests using Rational XDE Tester and ClearCase
  - Fixed many customer-reported and internal defects
  - Utilized UML, entity relationship diagrams, C/C++, embedded SQL, Java, Perl, and etc.

- School of Mathematics *2001 October – December*  
Thornhill, ON, Canada  
Instructor
- Taught math to elementary, middle and high school students in a friendly environment designed to maximize student-teacher interaction

- Ontario Power Generation (OPG) Inc. and New *2001 January – April*  
Horizon System Solutions  
Toronto, ON, Canada  
Web Developer
- Developed an online database management system and knowledge base system for the Operations Support department
  - Set up security features for OPG's supply chain intranet site
  - Developed web pages for HR re-engineering process
  - Implemented a web interface for Operating Experience (OPEX) JIT document search
  - IT division of OPG became a part of New Horizon System Solutions during this time

- Jung Ko Taekwondo Academy and Fitness *1997 January – 2007 December*  
Thornhill, ON, Canada  
Part-time instructor and grader
- Holds an official W.T.F. 4th Degree Master's Black Belt (with over 16 years of experience) in Taekwondo
  - Coached in 2000 Olympic Division Canadian National Taekwondo Championship
  - Frequently led demonstration teams

- Offered private instruction for both beginner/advanced students
- Worked as a camp counselor, taking great care of kids

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## PRESENTATIONS

- “Reducing Combinatorics in Product Line Testing”, AOSD 2011, Brazil, March 2011.
- “Reducing Configurations to Monitor in a Software Product Line”, RV 2010, Malta, November 2010.
- “Systematic and Efficient Testing of Product-Lines”, Programming Languages Group, CS Dept., University of California, Los Angeles, CA, USA. Hosted by Prof. Todd Millstein. August 2009.
- “Systematic and Efficient Testing of Product-Lines”, Robust Software Engineering Group, NASA Ames Research Center, Moffett Field, CA, USA. Hosted by Dr. Corina Pasareanu. August 2009.
- “On the Modularity of Feature Interactions”, GPCE 2008, Nashville, TN, USA. October 2008.
- “On-Demand Materialization of Aspects for Application Development”, SPLAT Workshop, AOSD 2008, Brussels, Belgium. March 2008.
- “On-Demand Materialization of Aspects for Application Development”, Middleware Systems Research Group, ECE Dept., University of Toronto, ON, Canada. Hosted by Prof. Arno Jacobsen. July 2007.
- “On-Demand Materialization of Aspects for Application Development”, Programming Languages Seminar, CS Dept., University of Waterloo, ON, Canada. Hosted by Prof. Ondrej Lhotak. January 2007.
- “Feature Models are Views on Ontologies”, SPLC 2006, Baltimore, MD, USA. August 2006.
- “Synchronizing Cardinality-Based Feature Models and Their Specializations”, ECMDA 2005, Nuremberg, Germany. November 2005

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## RESEARCH EXPERIENCE

- Visiting J-1 Scholar, CS Department, The University of Texas at Austin, USA, September 2007 – December 2007. Advisor: Prof. Don Batory
- Ph.D. Student, ECE Department, University of Waterloo, Canada, May 2006 – December 2007. GPA: 95.3% (4.00). Advisor: Prof. Krzysztof Czarnecki
- Participant, Summer School on Generative and Transformational Techniques in Software Engineering (GTTSE), Braga, Portugal, July 4-8, 2005.
- Attended MODELS 2009, GPCE 2009, OOPSLA 2008, GPCE 2008 (presenter), IEEE Requirements Engineering 2006 (workshop chair), SPLC 2006 (presenter), ECMDA 2005 (presenter), OOPSLA 2004 (student volunteer)

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## **TECHNICAL KNOWLEDGE AND EXPERIENCE**

- Fluent in C++, Java (including Eclipse plugin development), C, and Visual Basic
- Familiar with OMG notations and standards, including UML, MOF, model-driven development (MDD) and model-driven architecture (MDA)
- Experienced in UNIX (esp. AIX) multi-process programming and tools (VI, EMACS)
- Experienced in client/server web application development using Active Server Pages (ASP), SQL (MySQL, DB2, Access), DHTML, VBScript and JavaScript. Entirely developed a website that advertises new and used vehicles for a Waterloo start-up company.
- Knowledge of MATLAB, advanced compilers, advanced data structures and algorithms and formal methods

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## **ACTIVITIES AND INTERESTS**

- Volunteered for Micah 6 Food Pantry (Austin, TX), Capital Area Food Bank of Texas (Austin, TX), and Canadian Cancer Society (Toronto, ON)
- Division Council Chair for Waterloo Co-op Residence Incorporated Hammar division, a student-run residence (a member of the council for over 5 terms)
- Participated in 2001, 1998 Santa Claus Parade of Richmond Hill, 1999 Korean Seniors Walkathon and led Taekwondo demonstrations at city hall and Mel Lastman square
- Enjoys piano, golf, and soccer (playmaker for high school team and recreational teams)
- Peer tutored extensively for grade 9 - OAC students in W.L. Mackenzie C.I.

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## **STATUS**

- Citizenship: Canada
- Visa status: F-1