

SUMAN ROYCHOUDHURY

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OBJECTIVE	A challenging position in the field of compiler development /software engineering	
EDUCATION	2002-2006 University of Alabama at Birmingham Ph.D. Candidate, Computer and Information Sciences M.S. Computer and Information Sciences	Birmingham, AL Dec, 2006 (Expected) Dec,2004
	1994-1998 National Institute of Technology, Kurukshetra, India B.Tech. Electrical Engineering	Kurukshetra, India Jul,1998
SELECTED PUBLICATIONS	<ul style="list-style-type: none"> ▪ Suman Roychoudhury, Jeff Gray, Jing Zhang, Purushotham Bangalore and Anthony Skjellum “A Program Transformation Technique to Support AOP within C++ Templates,” submitted for review for AOSD 2006 Book Chapter (Springer), edited by Sami Beydeda and Volker Gruhn. ▪ Xiaoqing Wu, Barrett Bryant, Jeff Gray, Suman Roychoudhury, and Marjan Mernik, “Separation of Concerns in Compiler Development using Aspect-Orientation,” <i>ACM Symposium for Applied Computing (SAC) – Programming for Separation of Concerns Track</i>, Dijon, Bourgogne, France, March 2006. ▪ Suman Roychoudhury and Jeff Gray, “Towards Language-Independent Weaving Using Grammar Adapters,” <i>AOSD Workshop on Linking Aspect Technology and Evolution (LATE)</i>, Chicago, IL, March 2005. ▪ Xiaoqing Wu, Suman Roychoudhury, Barrett Bryant, Jeff Gray, and Marjan Mernik, “A Two-Dimensional Separation of Concerns for Compiler Construction,” <i>ACM Symposium for Applied Computing (SAC) – Programming for Separation of Concerns Track</i>, Santa Fe, NM, March 2005, pp. 1365-1369. ▪ Hui Wu, Jeff Gray, Suman Roychoudhury, and Marjan Mernik, “Weaving a Debugging Aspect into Domain-Specific Language Grammars,” <i>ACM Symposium for Applied Computing (SAC) – Programming for Separation of Concerns Track</i>, Santa Fe, NM, March 2005, pp. 1370-1374. ▪ <u>Alabama IEEE “Best Paper of 2004” Award (1st place):</u> Jeff Gray and Suman Roychoudhury, “A Technique for Constructing Aspect Weavers Using a Program Transformation Engine,” <i>AOSD '04: International Conference on Aspect-Oriented Software Development</i>, Lancaster, UK, March 22-26, 2004, pp. 36-45. ▪ Jeff Gray, Jing Zhang, Yuehua Lin, Hui Wu, Suman Roychoudhury, Rajesh Sudarsan, Aniruddha Gokhale, Sandeep Neema, Feng Shi, and Ted Bapty, “Model-Driven Program Transformation of a Large Avionics Framework,” 	

Generative Programming and Component Engineering (GPCE 2004), Springer-Verlag LNCS 3286, Vancouver, BC, October 2004, pp. 361-378.

- Shairaj Shaik, Raymond Corvin, Rajesh Sudarsan, Faizan Javed, Qasim Ijaz, Suman Roychoudhury, Jeff Gray, and Barrett Bryant, "SpeechClipse - An Eclipse Speech Plug-In," *Eclipse Technology eXchange Workshop (OOPSLA)*, Anaheim, CA, October 2003.
- Suman Roychoudhury, Jeff Gray, Hui Wu, Jing Zhang, and Yuehua Lin, "A Comparative Analysis of Meta-programming and Aspect-Orientation," *41st Annual ACM SE Conference*, Savannah, GA, March 7-8, 2003, pp. 196-201.
- Demo: Jeff Gray, Suman Roychoudhury, Jing Zhang, and Yuehua Lin, "C-SAW and GenAWeave: A Two-Level Aspect Weaving Toolsuite," *AOSD '05: International Conference on Aspect-Oriented Software Development*, Chicago, IL, March 2005.
- Demo: Jeff Gray, Ira Baxter, Jing Zhang, and Suman Roychoudhury, "C-SAW and GenAWeave: A Two-Level Aspect Weaving Toolsuite," *Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA)*, Vancouver, BC, October 2004.
- Student Research Poster: Suman Roychoudhury and Jeff Gray, "Separating Crosscutting Concerns in Scientific Computing through Program Transformations," *Aspect-Oriented Software Development Student Poster Extravaganza*, Chicago, IL, March 2005.
- Student Research Poster: Suman Roychoudhury and Jeff Gray, "A Language-Independent Approach to Software Maintenance Using Grammar Adapters," *Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA)*, Vancouver, BC, October 2004.
- Doctoral Symposium: Suman Roychoudhury, "A Language-Independent Approach to Software Maintenance Using Grammar Adapters," *Doctoral Symposium, Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA)*, Vancouver, Canada, October 2004, pp. 52-53
- Student Presentation (1st place): "GenaWeave: A Language-Parametric Aspect Weaving Framework," presented at *2005 Mid-Southeast ACM Chapter Fall Conference*, Gatlinburg, Tennessee, November 10-11 2005
- Student Presentation (1st place): "A Comparative Analysis of Metaprogramming and Aspect-Orientation," presented at *Alabama Academy of Science*, Jacksonville, Alabama, March 2003
- Student Presentation (2nd place): "A Technique for Constructing Aspect Weavers using a Program Transformation Engine," presented at the *3rd Annual Southeastern Software Engineering Conference*, Huntsville, AL, March 2004 and *UAB Graduate Research Day*, Birmingham, AL, April 2004

<p style="text-align: center;">WORK EXPERIENCE</p>	<p>8/2002-Present Research Assistant University of Alabama at Birmingham</p> <ul style="list-style-type: none"> ▪ Presently working on developing a generic Abstract Syntax Tree based language-independent aspect-oriented weaving framework for software adaptation and maintenance using the Design Maintenance System (DMS), PARLANSE Parallel Programming Language, C++ and the Generic Modeling Environment (GME) ▪ Implemented Approximate String Matching Algorithm for matching DNA Sequence in Biological Gene Data ▪ Presently working as a Research Assistant on an NSF Grant to analyze and re-design scientific libraries (HPL benchmarks, used for benchmarking supercomputers) for improved scalability, maintenance and performance using the language-parametric GenaWeave Framework. ▪ Team member: Speech-Enabled Integrated Development Environment (IDE) for physically challenged programmers using Eclipse, accepted for presentation by highly competitive OOPSLA Eclipse Technology eXchange (ETX'03) workshop. ▪ Developed aspect-oriented Pascal, an extension of the Object Pascal programming language, accepted for publication at the International Conference on Aspect Oriented Software Development, Lancaster, UK (AOSD'04). <p>7/1998-8/2002 Software Engineer RS Software India Ltd, Neptune Solutions Pvt. Ltd, India</p> <ul style="list-style-type: none"> ▪ Developed the first Business-2-Business Integrated (B2Bi) solution for SmartDisk Corporation USA and Ingram Micro Inc. using Microsoft BizTalk Server (BTS 2000), SQL Server 2000 and VC++ 6.0. ▪ Member of the Software Engineering Process Group (SEPG) for SEI-CMM Level 4 certification and ISO-9001 quality assurance certification for RS Software India Ltd. and Neptune Solutions Pvt. Ltd India respectively.
<p style="text-align: center;">PROFESSIONAL SKILLS</p>	<ul style="list-style-type: none"> ▪ Languages/Packages/Scripts C/C++, Java , C#, PARLANSE, UML, HTML, XML, ASP, JSP, PHP ▪ Operating System MS-Windows, Unix, Linux, ▪ Database Oracle, MSSQL, SQL Server, DB2, Access ▪ Web Server/Middleware/Distributed System .NET, Web Services, PVM, MPI, IIS, RMI, CORBA, J2EE, EJB ▪ Development/Modeling Environment Visual Studio, Rational Rose, JBuilder, GME (Generic Modeling Environment), Eclipse

<p>SELECTED COURSE PROJECTS</p>	<ul style="list-style-type: none"> ▪ Parallel Programming Random number generators using PVM, pthread. ▪ Artificial Intelligence Game programming for Chinese Checkers, capable of tournament between peer students. ▪ Advanced Data Structures and Algorithms Implemented Approximate String Matching Algorithm for matching DNA Sequence in Biological Gene Data ▪ Computer Networking Implemented an e-mail client for RFC 821 (SMTP) in Java ▪ Software Development/Reflective and Adaptive Systems Designed a model for ATM using the Generic Modeling Environment (GME) and developed model interpreters to generate code that simulates the ATM machine ▪ Database Systems Developed a database for an online book store using XML, JDBC, JSP, Oracle, JAXP. ▪ Compiler Design Developed a compiler for a specification language Two-Level Grammar (TLG), using JLEX, CUP.
<p>HONORS AND AWARDS</p>	<ul style="list-style-type: none"> ▪ IEEE Alabama Best Paper prize (2004) ▪ Best student paper in Computer Science and Engineering at the 2003 Spring Meeting of the Alabama Academy of Science, Jacksonville, March 2003. ▪ Second place, in Mathematics and Computer Science Division, at UAB Graduate Research Day, Birmingham, April 2004 and March 2005. ▪ First place in Doctoral Division in the ACM chapter of Mid-South East conference, Gatlinburg, Tennessee, November 2005. ▪ National Merit Scholarship from Govt. of India in recognition of High Standing in School Final Exam, 1994. ▪ \$1000 Travel Grant to attend OOPSLA Doctoral Symposium, October 2004. ▪ \$500 Travel Grant from ACM SIGPLAN to attend ACM Student Research Competition at OOPSLA 2004. ▪ Tuition Scholarship and Teaching/Research Assistantship in Dept. of Computer and Information Sciences, UAB Fall 2002 - Present
<p>VOLUNTEER EXPERIENCE</p>	<ul style="list-style-type: none"> ▪ Volunteer for AIS (Association of Indian Students) at UAB ▪ Student Volunteer for OOPSLA '03 Conference ▪ Secretary, UAB ACM Student Chapter, 2005
<p>MEMBERSHIP</p>	<p>Student Member, ACM & IEEE</p>