Raffi Khatchadourian

Assistant Professor–Computer Science

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Objective

To develop techniques, methodologies, theories, and tools that alleviate the burden associated with correctly and efficiently evolving large and complex software systems.

Interests

Software security, secure software engineering, formal methods, programming languages, refactoring, automated software evolution, static and dynamic program analysis, information retrieval, recommendation systems.

Experience

2016– **Doctoral Faculty**, *The Graduate School and University Center's PhD Program in Computer Science, City University of New York*, New York, NY.

2016– **Assistant Professor of Computer Science**, *Hunter College, City University of New York*, New York, NY.
Courses taught: Advanced Applications: A Capstone for Majors (CSCI 49900), Programming Projects Seminar for Minors (CSCI 23300). Lecturing, grading, online course content administration, weekly office hours, course coordination, and peer observation. *Committees*: Women in Computer Science at Hunter College (WICS-HC) in collaboration with the National Center for Women & Information Technology (NCWIT).

2014–2016 **Assistant Professor of Computer Systems Technology**, *New York City College of Technology, City University of New York*, Brooklyn, NY.
Courses taught: Problem Solving with Computer Programming (CST 1101), Programming Fundamentals (CST 1201), Multimedia and Mobile Device Programming (CST 2301), Dynamic Web Development (CST 4713). Lecturing, grading, lab instruction, online course content administration, advising, weekly office hours, course coordination, and peer observation. *Committees*: CUNY Committee on Academic Technology (CUNY-CAT), CUNY-CAT subcommittee on the CUNY Academic Commons, Curriculum, Colloquium, Assessment, and Recruitment. Speaker scheduling and coordination, website creation and maintenance, event promotion.

2011–2014 **Software Engineer**, *Apple Inc.*, Cupertino, CA.
Software Engineer in Digital Rights Management (DRM) (June 2012–August 2014). Security and content protection for iTunes, iTunes store, iBooks, and App store. Performance analysis and tuning of server-side iTunes store operations and client-side transactions. Secure content key and credentials management and concurrency features for client-side iTunes. Design, development, and documentation of secure purchase receipt/certification for content purchased in Mac OS X and iOS app stores. Fraud prevention.
Software Engineer in Hardware Test Engineering for iPhone, iPad, and iPod Engineering (April 2011–May 2012). Designed, implemented, and maintained software in Python and Objective-C for automated hardware testing of mobile devices. Devised test plans and architected distributed hardware test software. Performed peer code reviews, mentored team members including interns, and lead weekly software discussion meetings. Implemented factory test automation process control and data analysis software.

2006–2011	**Graduate Researcher**, *Ohio State University*, Columbus, OH, Advisor: N. Soundarajan. Formal program reasoning, verification, and specification of Aspect-Oriented (AO) software. Adaptation of a rely-guarantee approach for specifying AO software. Axiomatic, trace-based specifications for combining the execution behavior of aspects and with that of the base-code to arrive at an overall system behavioral specification.
2005–2011	**Graduate Teaching Associate Lecturer**, *Ohio State University*, Columbus, OH. *Courses taught*: Introduction to Programming and Algorithms for Engineers and Scientists (CS&E 202), Introduction to C++ Programming (CS&E 230). Lecturing, lesson planning, lab instruction, exam design, online course content administration, weekly office hours, instructional video and audio production. 2010 Outstanding Departmental Graduate Student Teaching (Eleanor Quinlan Memorial) Award.
2010	**Visiting Researcher**, *University of Tokyo*, Tokyo, Japan, Supervisor: H. Masuhara. Programming Principles and Practices (PPP) Group, Department of Graphics and Computer Science. Program change prediction and code completion techniques for Aspect-Oriented software in the context of Integrated Development Environments (IDEs).
2009	**Graduate Research Associate**, *Ohio State University*, Columbus, OH, Advisor: A. Rountev. Program Analysis and Testing of Object-Oriented Software (PRESTO) Group, Department of Computer Science & Engineering. Summary-based, intra-procedural points-to analysis for Java programs. Augmented the Soot Java byte-code analysis and optimization framework (*see sable.mcgill.ca/soot*) to support summary-based (cached) byte-code analysis for increased performance of common analyzes, such as points-to analysis, involving reusable software libraries and frameworks.
2008	**Visiting Graduate Research Associate**, *Lancaster University*, Lancaster, UK, Supervisor: A. Rashid, Mentor: P. Greenwood. Aspect-Oriented Software Engineering Group, Computing Department. Traceability in Aspect-Oriented (AO) analysis and design. Software artifact traceability to support automated source code evolution of AO software, enabling developers to correctly maintain AO software as requirements are altered.
2007	**Research Intern**, *Bell Laboratories, Alcatel-Lucent*, Murray Hill, NJ, Supervisor: R. Hull, Mentor: K. Namjoshi. Program language design for shared experience, multi-media, multi-protocol, event-driven applications. Novel Application Programmer Interface (API) based on hierarchical finite automata and a research prototype implementation.
2006–2007	**Graduate Researcher**, *Ohio State University*, Columbus, OH, Advisor: A. Rountev. Program Analysis and Testing of Object-Oriented Software (PRESTO) Group, Department of Computer Science & Engineering. Source code refactoring of Java programs through static analysis/type inferencing to reduce manual software maintenance. Automated source-to-source transformation of Java software that utilizes legacy enumeration patterns to instead utilize the Enum construct introduced in Java 5. Eclipse IDE plug-in development.
2006	**Graduate Research Associate**, *Ohio State University*, Columbus, OH, Advisor: F. Khan. EASE Laboratory, Department of Electrical & Computer Engineering. Developed new ECE/CSE 668 course to model a Challenge-X hybrid SUV automobile in a component-based software architecture.
2004–2005	**Software Engineer**, *State of New Jersey Office of Information Technology*, Trenton, NJ. Developed J2EE architecture and infrastructure for the New Jersey Insurance Surcharge System, a multi-level client, high-volume transactional system. Created object-oriented design and stored procedures in an Oracle RDBMS.
2003–2004	**UNIX Systems Administrator**, *Integrated Medical Care*, Toms River, NJ. Created and administered network devoted to web authoring. Administered and configured local web servers, Java application containers, source code repository, RDBMS (MySQL), and windows clients using samba.

Education

2005–2011 **Ph.D. Computer Science**, *Ohio State University*, Columbus, OH, Thesis: *Techniques for Automated Software Evolution*, Advisor: N. Soundarajan.
Major: Software Methodology; Minors: Distributed Software Systems, Mathematics. Relevant coursework: Software Engineering, Programming Languages, Computer Architecture, Operating Systems, Analysis of Algorithms, Computability & Unsolvability, Distributed Computing, Mathematical Logic, Set Theory. Awards: NSF East Asia and Pacific Summer Institutes (EAPSI) Award, CS&E Graduate Teaching Award.

2010 **M.S. Computer Science**, *Ohio State University*, Columbus, OH.

2008 **Visiting Graduate Student in Computing**, *Lancaster University*, Lancaster, UK, Advisor: A. Rashid.

2004 **B.S. Computer Science (cum laude)**, *Monmouth University*, West Long Branch, NJ, GPA: 3.63/4.
Relevant coursework: Database Systems, Probability & Statistics, Operating Systems Analysis, Object-Oriented Software Development, File Management, Systems Administration, Software Engineering Concepts, Computer Networks, Computer Algorithms, Computer Architecture, Scientific Computing Applications, Problem Solving. Activities & Awards: Outstanding Computer Science Student, ACM Student Chapter President and Re-establisher, Science Advisory Council Member, Lambda Sigma Tau Member, Kappa Mu Epsilon Member, Dean's list.

Publications

(My and my research students' names are in boldface)

Conference Publications (peer-reviewed; ordered chronologically)

Raffi Khatchadourian and Hidehiko Masuhara. Automated refactoring of legacy java software to default methods. In *International Conference on Software Engineering (to appear)*, ICSE '17. ACM/IEEE, 2017. (68/398; 17% acceptance rate).

Raffi Khatchadourian, Awais Rashid, Hidehiko Masuhara, and Takuya Watanabe. Detecting broken pointcuts using structural commonality and degree of interest. In *International Conference on Automated Software Engineering*, ASE 2015, pages 641–646, New York, NY, USA, November 2015. IEEE/ACM. (77/326; 23.6% acceptance rate). *See bit.ly/ase2015_fraglight*.

Neelam Soundarajan, Derek Bronish, and **Raffi Khatchadourian**. Formalizing reusable aspect-oriented concurrency control. In *Proceedings of the 23rd International Conference on Software Engineering & Knowledge Engineering (SEKE '11)*, pages 111–114. Knowledge Systems Institute Graduate School, July 2011. *See tinyurl.com/seke11*.

Raffi Khatchadourian, Phil Greenwood, Awais Rashid, and Guoqing Xu. Pointcut rejuvenation: Recovering pointcut expressions in evolving aspect-oriented software. In *Proceedings of the 24th International Conference on Automated Software Engineering (ASE '09)*, pages 575–579, Auckland, New Zealand, November 2009. IEEE/ACM. (71/222; 32% acceptance rate). *See tinyurl.com/ase2009rejuv*.

Neelam Soundarajan, **Raffi Khatchadourian**, and Johan Dovland. Reasoning about the behavior of aspect-oriented programs. In J. Smith, editor, *Proceedings of the 11th IASTED International Conference on Software Engineering and Applications (SEA '07)*, Cambridge, MA, USA, November 2007. ACTA Press. *See tinyurl.com/sea2007*.

Raffi Khatchadourian, Jason Sawin, and Atanas Rountev. Automated refactoring of legacy java software to enumerated types. In *International Conference on Software Maintenance*, ICSM 2007, pages 224–233. IEEE, October 2007. (46/214; 21% acceptance rate). *See tinyurl.com/icsm07enum*.

Journal Publications (peer-reviewed)

Raffi Khatchadourian. Automated refactoring of legacy java software to enumerated types. *Automated Software Engineering*, pages 1–31, 2016.

Raffi Khatchadourian, Awais Rashid, Hidehiko Masuhara, and Takuya Watanabe. Detecting broken pointcuts using structural commonality and degree of interest. *Submitted to Science of Computer Programming*, 2016.

Raffi Khatchadourian, Phil Greenwood, Awais Rashid, and Guoqing Xu. Pointcut rejuvenation: Recovering pointcut expressions in evolving aspect-oriented software. *IEEE Transactions on Software Engineering (TSE)*, 38(3):642–657, 2012. *See tinyurl.com/tse12*.

Workshop Publications (peer-reviewed; ordered chronologically)

Raffi Khatchadourian, **Olivia Moore**, and Hidehiko Masuhara. Towards improving interface modularity in legacy java software through automated refactoring. In *Companion Proceedings of the 15th International Conference on Modularity*, MODULARITY Companion 2016, pages 104–106, New York, NY, USA, March 2016. ACM.

Neelam Soundarajan and **Raffi Khatchadourian**. Specifying reusable aspects. In *Proceedings of the 5th Asian Workshop on Aspect-Oriented and Modular Software Development (AOAsia '09) at the 24th International Conference on Automated Software Engineering (ASE '09)*, Auckland, New Zealand, November 2009. *See tinyurl.com/aoasia2009*.

Phil Greenwood, Awais Rashid, and **Raffi Khatchadourian**. Contributing factors to pointcut fragility. In *Proceedings of the 3rd International Workshop on Assessment of Contemporary Modularization Techniques (ACoM '09) at the 24th ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA '09)*, pages 19–24, Orlando, Florida, USA, October 2009. ACM. *See tinyurl.com/wacom2009*.

Raffi Khatchadourian, Phil Greenwood, and Awais Rashid. On the assessment of pointcut design in evolving aspect-oriented software. In *Proceedings of the 2nd International Workshop on Assessment of Contemporary Modularization Techniques (ACoM '08) at the 23rd ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA '08)*, pages 9–10, Nashville, Tennessee, USA, October 2008. Lancaster University, ACM. *See tinyurl.com/wacom2008*.

Raffi Khatchadourian, Johan Dovland, and Neelam Soundarajan. Enforcing behavioral constraints in evolving aspect-oriented programs. In *Proceedings of the 7th International Workshop on Foundations of Aspect-Oriented Languages (FOAL '08) at the 7th International Conference on Aspect-Oriented Software Development (AOSD '08)*, pages 19–28, Brussels, Belgium, April 2008. ACM. *See tinyurl.com/foal2008*.

Raffi Khatchadourian and Neelam Soundarajan. Rely-guarantee approach to reasoning about aspect-oriented programs. In *Proceedings of the 5th International Workshop on Software Engineering Properties of Languages and Aspect Technologies (SPLAT '07) at the 6th International Conference on Aspect-Oriented Software Development (AOSD '07)*, Vancouver, British Columbia, Canada, March 2007. ACM. *See tinyurl.com/splat2007*.

Tool Demonstrations (peer-reviewed; ordered chronologically)

Raffi Khatchadourian, Awais Rashid, Hidehiko Masuhara, and Takuya Watanabe. Fraglight: Shedding light on broken pointcuts in evolving aspect-oriented software. In *Companion Proceedings of the 2015 ACM SIGPLAN International Conference on Systems, Programming, Languages and Applications: Software for Humanity*, SPLASH Companion 2015, pages 17–18, New York, NY, USA, October 2015. ACM.

Raffi Khatchadourian and Benjamin Muskalla. Enumeration refactoring: A tool for automatically converting java constants to enumerated types. In *Proceedings of the 25th International Conference on Automated Software Engineering (ASE '10)*, pages 181–182, Antwerp, Belgium, September 2010. IEEE/ACM. (18/45; 40% tool demonstration acceptance rate). *See tinyurl.com/ase2010enum*.

Raffi Khatchadourian and Awais Rashid. Rejuvenate pointcut: A tool for pointcut expression recovery in evolving aspect-oriented software. In *Proceedings of the 8th International Working Conference on Source Code Analysis and Manipulation (SCAM '08)*, pages 261–262, Beijing, China, September 2008. IEEE. *See tinyurl.com/scam2008*.

Posters (peer-reviewed; ordered chronologically)

Md. Arefin and **Raffi Khatchadourian**. Porting the netbeans java 8 enhanced for loop lambda expression refactoring to eclipse. In *Companion Proceedings of the 2015 ACM SIGPLAN International Conference on Systems, Programming, Languages and Applications: Software for Humanity*, SPLASH Companion 2015, pages 58–59, New York, NY, USA, October 2015. ACM.

Technical Reports

Raffi Khatchadourian, Phil Greenwood, Awais Rashid, and Guoqing Xu. Pointcut rejuvenation: Recovering pointcut expressions in evolving aspect-oriented software. Technical Report COMP-001-2008, Revised March 2009, May 2009, Lancaster University, Lancaster, UK, August 2008. *See tinyurl.com/rejuvpctech*.

Raffi Khatchadourian, Jason Sawin, and Atanas Rountev. Automated refactoring of legacy java software to enumerated types. Technical Report OSU-CISRC-4/07-TR26, Ohio State University, April 2007. *See tinyurl.com/enumtr*.

Project Deliverables

Jean-Claude Royer, Joost Noppen, Nicolas Anquetil, Andreas Rummler, Ralf Mitschke, André Sousa, Uira Kulesza, **Raffi Khatchadourian**, Phil Greenwood, Awais Rashid, and Ismênia Galvao. Software support for the traceability framework, including extension of current configuration management and product line evolution model. Technical Report AMPLE D4.2, Aspect-Oriented, Model-Driven Product Line Engineering, October 2008. *See tinyurl.com/ample-d42-p*.

Raffi Khatchadourian, Ruzanna Chitchyan, Phil Greenwood, Awais Rashid, Juan A. Valenzuela, Luis M. Fernández, Mónica Pinto, Lidia Fuentes, Andrew Jackson, and Siobhán Clarke. Over-all aspect-oriented analysis and design approach. Technical Report AOSD-Europe Deliverable D132, AOSD-Europe-ULANC-49, European Network of Excellence on Aspect-Oriented Software Development, September 2008. *See tinyurl.com/aosd-d132-p*.

Mónica Pinto, Lidia Fuentes, Ruzanna Chitchyan, Awais Rashid, Andrew Jackson, Siobhán Clarke, Boris Shishkov, Bedir Tekinerdogan, Mehmet Aksit, Phil Greenwood, and **Raffi Khatchadourian**. Traceability framework: From requirements through architecture and design. Technical Report AOSD-Europe Deliverable D126, AOSD-Europe-ULANC-43, European Network of Excellence on Aspect-Oriented Software Development, July 2008. *See tinyurl.com/aosd-d126-p*.

Safoora Omer Rashid, Ruzanna Chitchyan, Awais Rashid, **Raffi Khatchadourian**, and Phil Greenwood. Approach for change impact analysis of aspectual requirements. Technical Report AOSD-Europe Deliverable D110, AOSD-Europe-ULANC-40, European Network of Excellence on Aspect-Oriented Software Development, January 2008. *See tinyurl.com/aosd-d110-p*.

Theses

Raffi Khatchadourian. *Techniques for Automated Software Evolution*. PhD thesis, Ohio State University, 247 University Hall, 230 North Oval Mall, Columbus, OH, USA 43210, April 2011. *See tinyurl.com/khatchad-thesis*.

Patents

Gianpaolo Fasoli, Augustin Farrugia, Apoorva Govind, and **Raffi Khatchadourian**. Controlling use of shared content items based on client device, January 21 2016. US Patent 20,160,019,375.

Teaching

Fall 2016	**Instructor**, *CSCI 49900: Advanced Applications: A Capstone for Majors*, Department of Computer Science, Hunter College, City University of New York.
	Computer science majors test their mettle on major projects. Working in small groups, students implement systems that involve at least two platforms running programs written in at least three languages. Duties include grading, lesson planning, online course content administration, course coordination, and weekly office hours.
Fall 2016	**Instructor**, *CSCI 23300: Programming Projects Seminar for Minors*, Department of Computer Science, Hunter College, City University of New York.
	Capstone for Computer Science minors, affording students the opportunity to write reasonably large and complex programs. Students draw topics from their majors or other areas of interest. Duties include lecturing, grading, lesson planning, online course content administration, and weekly office hours.
Spring 2016	**Instructor**, *CST 4713: Dynamic Web Development*, Department of Computer Systems Technology, New York City College of Technology, City University of New York.
	Introduces the fundamentals of dynamic web application development and provides instruction in building web pages dynamically, organizing projects into web applications, and deploying these applications using a web server. Hands-on laboratory exercises reinforce the material presented in the lectures and enable students to develop related programming skills. Duties include lecturing, lab instruction, grading, lesson planning, exam design, online course content administration, and weekly office hours. *See bit.ly/cst4713*.
Fall 2014, Spring 2015, Fall 2015, Spring 2016	**Instructor**, *CST 1201: Programming Fundamentals*, Department of Computer Systems Technology, New York City College of Technology, City University of New York.
	Intensive introduction to programming using Java. Fundamentals of Java programming including control structures, user-defined methods, Object-Oriented Programming (OOP), and simple GUIs. Development, implementation, and execution of projects with an eye to industry standards. Duties include lecturing, lab instruction, grading, lesson planning, exam design, online course content administration, and weekly office hours. *See tinyurl.com/cst1201*.
Spring 2015, Fall 2015	**Instructor**, *CST 2301: Multimedia and Mobile Device Programming*, Department of Computer Systems Technology, New York City College of Technology, City University of New York.
	Programming mobile devices, such as cell phones, PDAs, and other small computational devices using Java. Strengths and limitations of the JVM on small devices. Configurations and profiles, standard and custom user interface elements and events, persistence, drawing and animation, audio and video APIs, comparison of current technologies. Duties include lecturing, lab instruction, grading, lesson planning, exam design, online course content administration, and weekly office hours. *See tinyurl.com/cst2301sp15*.
Fall 2014	**Instructor**, *CST 1101: Problem Solving with Computer Programming*, Department of Computer Systems Technology, New York City College of Technology, City University of New York.
	Problem solving using logic. Problem nature, common solution approaches, and analysis techniques. Flowcharting interactive 3D graphics, and introduction to algorithm analysis and comparison. Duties included lecturing, lab instruction, grading, lesson planning, exam design, online course content administration, and weekly office hours. *See tinyurl.com/cst1101*.
May 2014	**Guest Lecturer**, *Lecture on Recursion using Java*, Department of Computer Systems Technology, New York City College of Technology, City University of New York.
	Introductory lecture on recursion with examples in Java. *See slidesha.re/17AsnMB.*

March 2014	**Guest Lecturer**, *Lecture on Recursion using C++*, Department of Mathematics, Computer & Information Science, State University of New York College at Old Westbury, Old Westbury, NY. Introductory lecture on recursion with examples in C++. *See slidesha.re/1Ljs6ev.*
Au05, Wi06, Sp06, Su06, Wi07, Au07, Wi09, Sp09, Wi10, Sp10, Au10, Wi11	**Graduate Teaching Associate Lecturer (Instructor of Record)**, *CS&E 230: Introduction to C++ Programming*, Department of Computer Science & Engineering, Ohio State University. Introduction to programming in C++ and Object-Oriented programming; encapsulation using classes, inheritance, etc.; data structures, introduction to search and sorting algorithms, complexity, Object-Oriented design. Duties included lecturing, grading, lesson planning, exam design, online course content administration, weekly office hours, and instructional video and audio production.
Sp07, Au08, Au09	**Graduate Teaching Associate Lecturer (Instructor of Record)**, *CS&E 202: Introduction to Programming and Algorithms for Engineers and Scientists*, Department of Computer Science & Engineering, Ohio State University. Introduction to computer programming and to problem solving techniques using computer programs with applications in engineering and the physical sciences; algorithm development; programming lab experience. Duties included lecturing, grading, lab instruction, online course content administration, weekly office hours, and instructional video production.
Spring 2008	**Invited Lecturer**, *Seminar in LaTeX Typography*, Department of Graduate Studies, Lancaster University, Lancaster, UK. One-day seminar to introduce LaTeX typography for scientific publications. Content included simple document construction, image/figure scaling and placement, and general thesis writing. Material was also comprised of automated table of contents management, indexes, bibliography, etc. *See slidesha.re/1AsekTT and slidesha.re/1ATDC0q.*
2003–2004	**Mathematics Tutor**, *Mathematics Learning Center*, Department of Mathematics, Monmouth University, West Long Branch, NJ. Tutored college-level courses such as College Algebra, Probability and Statistics, Discrete Math, Pre-calculus, and Calculus for Business and Finance.

Open Source Software

2015–	MIGRATE SKELETAL IMPLEMENTATION TO INTERFACE. Java source code refactoring plug-in for the Eclipse open source Integrated Development Environment. Migrates legacy Java skeletal implementations to Java 8 enhanced interfaces. *See git.io/vwpaK.*
2011–	FRAGLIGHT. AspectJ source code inferencing plug-in for the Eclipse open source Integrated Development Environment, providing tool support for early detection of broken pointcuts in evolving Aspect-Oriented software. Integrated with the Mylyn task focusing plug-in for Eclipse. *See eclipselabs.org/p/fraglight.*
2008–	REJUVENATE POINTCUT. AspectJ source code inferencing plug-in for the Eclipse open source Integrated Development Environment, providing tool support for pointcut expression recovery in evolving Aspect-Oriented software. *See code.google.com/p/rejuvenate-pc.*
2007–	CONVERT CONSTANTS TO ENUM. Java source code refactoring plug-in for the Eclipse open source Integrated Development Environment. Planned for release in the standard distribution of Eclipse. *See code.google.com/p/constants-to-enum-eclipse-plugin.*

Computer Skills

programming	Java S/EE, C++, Objective-C, AspectJ, C#	scripting	Python, bash, PHP
platforms	Java SDK, Eclipse SDK, Cocoa, .NET	versioning	Git, SVN, CVS, P4
IDE	Eclipse, Xcode, NetBeans, Visual Studio .NET, Vim	rules	JBoss Drools, Prolog
testing	JUnit, OCUnit	instruments	R&S CMW 500/CMU 200

building	ant, make, Xcode	administration	Apache, Samba, iptables
OS	Mac OS X, Linux, UNIX	typography	LaTeX
web	JSF, JBoss Seam, Drupal, WordPress	database	SQL, Postgresql, MySQL, Oracle

Academic Service

Departmental Service

2016– **Member**, *Women in Computer Science at Hunter College (WICS-HC) Committee in collaboration with the National Center for Women & Information Technology (NCWIT), Department of Computer Science, Hunter College, City University of New York*, New York, NY, Chair: Stewart Weiss.
Recruit and retain women students in the Computer Science Department at Hunter College.

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2015–2016 **Member**, *Curriculum Committee, Department of Computer Systems Technology, New York City College of Technology, City University of New York*, Brooklyn, NY, Chair: Candido Cabo.
Software engineering track evaluation and course proposals.

2014–2016 **Chair**, *Colloquium Committee, Department of Computer Systems Technology, New York City College of Technology, City University of New York*, Brooklyn, NY.
Presentations, presenter discovery, event hosting, organization, outreach, promotion, and website creation and maintenance. *See openlab.citytech.cuny.edu/cstcolloquium.*

2015–2016 **Secretary**, *Department of Computer Systems Technology, New York City College of Technology, City University of New York*, Brooklyn, NY.
Department meeting minutes.

2015 **Department Mobile Application Coordinator**, *Computer Information Association, Department of Computer Systems Technology, New York City College of Technology, City University of New York*, Brooklyn, NY.
Assisted with the coordination of a department mobile application for students and faculty. Communicated with college administration for application network security and privileges, as well as privacy concerns.

2015 **Interviewer**, *Computer Information Association, Department of Computer Systems Technology, New York City College of Technology, City University of New York*, Brooklyn, NY.
Participated as an interviewer for a mock interview event sponsored by the student-organized computer club. This event is used to help students prepare for internship and full-time position interviews. Asked various coding and other software-related questions. *See citytechcia.com.*

2014–2015 **Member**, *Assessment Committee, Department of Computer Systems Technology, New York City College of Technology, City University of New York*, Brooklyn, NY, Chair: Ashwin Satyanarayana.
Learning objectives creation and analysis.

2014– **Member**, *Recruitment Committee, Department of Computer Systems Technology, New York City College of Technology, City University of New York*, Brooklyn, NY, Chair: Fangyang Shen.
Open house preparation and presentations, communication with prospective students, and freshman orientation.

2011 **Member**, *Annual Awards Selection Committee, Department of Computer Science & Engineering, Ohio State University*, Columbus, OH.
Applicant review, voting, and discussion.

Collegiate Service

2015,2016 **Judge**, *City University of New York*, New York, NY.
New York City Science & Engineering Fair (NYCSEF) Final Round. *See nycsef.cuny.edu.*

2015,2016 **Judge**, *City University of New York*, New York, NY.
New York City Science & Engineering Fair (NYCSEF) Preliminary Round. *See nycsef.cuny.edu.*

Spring 2015,Fall 2015	**Faculty Judge**, *New York City College of Technology, City University of New York*, Brooklyn, NY.
	Undergraduate Research Poster Session. *See bit.ly/posters15.*
2015	**Panelist**, *New York City College of Technology, City University of New York*, Brooklyn, NY, Facilitator: Cailean Cooney.
	"Using Open Educational Resources (OER) in the Classroom: a Panel Discussion." A City Tech faculty panel discussion about integrating open educational resources (OER) into the classroom. Discussed my use of MIT Open Courseware and GitHub in the classroom. *See library.citytech.cuny.edu/blog/attend-a-faculty-panel-on-open-educational-resources.*
2015	**Orientation Participant**, *New York City College of Technology, City University of New York*, Brooklyn, NY, Facilitator: Bonne August.
	New Faculty Orientation.
2015	**Usability Study Participant**, *OpenLab, New York City College of Technology, City University of New York*, New York, NY, Administrator: Patrick Corbett.
	Answered questions about professional and pedagogical use of the OpenLab academic collaborative website. *See openlab.citytech.cuny.edu.*
2015	**Software Engineering Consultant**, *New York City College of Technology, City University of New York*, Brooklyn, NY.
	Assisted the college with evaluating service providers for a crowd funding web application. Recommended and coordinated students for development work.
2015	**Panelist**, *New York City Advancing Computer Science Careers through Enhanced Networking and Training (NYC ASCENT)*, New York, NY.
	"Academia or Industry?" Panel and Networking event at the New York University Polytechnic School of Engineering (NYU poly) Urban Future Lab. Discussed previous career experiences and decisions with post doctoral researchers and graduate students in the New York City area. *See bit.ly/nyc-ascent.*
2014	**Faculty Judge**, *New York City College of Technology, City University of New York*, Brooklyn, NY.
	8th Annual Public Speaking Competition. *See bit.ly/speech14.*

University Service

2015–2016	**Member**, *CUNY Academic Commons Subcommittee, City University of New York*, New York, NY, Chair: Matthew Gold.
	Attend monthly meetings regarding Academic Commons website status and growth, Academic Commons website bug reporting. *See bit.ly/cunycommons.*
2015–2016	**Alternate**, *Committee on Academic Technology (CAT), City University of New York*, New York, NY, Chair: George Otte.
	Attend monthly meetings regarding various facets of academic technology at CUNY, including instructional technology. *See bit.ly/cuny-cat.*
2015	**Usability Study Participant**, *Academic Commons, City University of New York*, New York, NY, Administrator: Samantha Raddatz.
	Answered questions about and participated in usability experiments for the CUNY Academic Commons collaborative website. *See cuny.is.*

Professional Activities

2016	Session chair for the 2016 International Workshop on Modularity Across the System Stack (MASS'16) of the 15th International Conference on Software Modularity (MODULARITY'16).
2016	Panelist on Modularity Across the System Stack: Challenges and Opportunities at the 2016 International Workshop on Modularity Across the System Stack (MASS'16) of the 15th International Conference on Software Modularity (MODULARITY'16). *See bit.ly/mass16panel.*

2016	Program Committee member for the 2016 International Workshop on Modularity Across the System Stack (MASS'16) of the 15th International Conference on Software Modularity (MODULARITY'16). *See 2016.modularity.info/track/mass-2016-papers.*
2016	Program Committee member for the symposium on Software Engineering Technology and Applications (SETA) of the 40th IEEE Computer Society International Conference on Computers, Software & Applications (COMPSAC'16). *See www.computer.org/web/compsac2016/seta2016.*
2016	Organizer for the 2016 International Workshop on Language Modularity (LaMod'16) of the 15th International Conference on Software Modularity (MODULARITY'16). *See 2016.modularity.info/track/LaMOD2016.*
2016	Program Committee member for the Tool Demonstration and Poster Session tracks of the 15th International Conference on Software Modularity (MODULARITY'16). *See 2016.modularity.info/track/modularity-2016-demos.*
2016	National Science Foundation (NSF) Graduate Research Fellowship Program (GRFP) Panelist Pool member. *See nsfgrfp.org.*
2015	Representative for the Eclipse Foundation at the 2015 Google Summer of Code (GSoC) Mentor Summit. *See sites.google.com/site/gsoc2015ms.*
Spring 2015, Fall 2015	Faculty mentor for the Emerging Scholars Undergraduate Research program. *See bit.ly/emerge15, bit.ly/emerge15b.*
2015–2016	Faculty mentor for the Louis Stokes Alliances for Minority Participation (LSAMP) Undergraduate Research program. *See bit.ly/lsamp2015-16.*
2015	Visiting Scholar at Security Lancaster, School of Computing and Communications, Lancaster University, Lancaster, United Kingdom. *See lancaster.ac.uk/security-lancaster.*
2015	Visiting Scholar at the Programming Research Group, Department of Mathematical and Computing Sciences, Tokyo Institute of Technology, Tokyo, Japan. *See prg.is.titech.ac.jp.*
2015	Google Summer of Code Project Mentor for two Eclipse projects. *See bit.ly/gsoc1 and bit.ly/gsoc881.*
2011–2013	Web maintainer for the Aspect-Oriented Software Development research website. *See aosd.net.*
2011	Organizing Committee member (Web Chair) for the European Conference on Object-Oriented Programming (ECOOP'11). *See 2011.ecoop.org.*
2010	Student volunteer at the ACM SIGPLAN/SIGSOFT International Conference on Systems, Programming, Languages, and Applications (SPLASH, formerly OOPSLA), Reno, Nevada, USA.
2009,2010	Google Summer of Code Proposed Project Mentor for Eclipse.
2008,2009,2010	Secondary reviewer for the IEEE/ACM International Conference on Automated Software Engineering (ASE).
2008,2009,2010	Secondary reviewer for the European Conference on Object-Oriented Programming (ECOOP).
2009,2010	Secondary reviewer for the International Conference on Aspect-Oriented Software Development (AOSD).
2007,2009	Student volunteer at the International Conference on Aspect-Oriented Software Development (AOSD), Vancouver, BC, Canada (2007), Charlottesville, VA, USA (2009).
2007,2009	Spring school participant at the International Conference of Aspect-Oriented Software Development (AOSD), Vancouver, BC, Canada (2007), Charlottesville, VA, USA (2009).
2008	Secondary reviewer for the 2nd Workshop on Assessment of Contemporary Modularization Techniques (ACoM) at the 23rd ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA).

2007 Textbook reviewer for "Programming with C++ Brief Edition, " D.S. Malik, Cengage Learning, Boston, MA.

2007 Participant at the 2nd European Summer School on Aspect-Oriented Software Development, Genoa, Italy.

2007 Program committee member for the 2nd Ohio Graduate Student Symposium on Computer and Information Science & Engineering (OGSS-CISE).

2007 Secondary reviewer for the 29th International Conference on Software Engineering (ICSE).

2004 President and re-establisher, Monmouth University ACM Student Chapter.

Presentations

March 2016 **International Workshop on Language Modularity À La Mode at the 15th International Conference on Modularity**, *LaMOD'16 at MODULARITY'16*, Málaga, Spain.
Presentation on "Towards Improving Interface Modularity in Legacy Java Software through Automated Refactoring." *See bit.ly/lamod16*.

March 2016 **New York City College of Technology, City University of New York**, *Brooklyn, NY*.
Presentation on "Towards Improving Interface Modularity in Legacy Java Software Through Automated Refactoring." *See bit.ly/nycct-interface*.

December 2015 **Hunter College, City University of New York**, *New York, NY*.
Presentation on "Detecting Broken Pointcuts using Structural Commonality and Degree of Interest." *See bit.ly/ase15frag*.

November 2015 **IEEE/ACM International Conference on Automated Software Engineering**, *ASE '15*, Lincoln, NE.
Presentation on "Detecting Broken Pointcuts using Structural Commonality and Degree of Interest." *See bit.ly/ase15frag*.

November 2015 **New York City College of Technology, City University of New York**, *Brooklyn, NY*.
Poster on "Automatic Modernization of Legacy Java Software" at the 13th Annual Poster Session of Faculty and Student Research and Faculty Publications Exhibit, Faculty Recognition Day. *See bit.ly/facday15*.

October 2015 **ACM SIGPLAN Conference on Systems, Programming, and Applications: Software for Humanity**, *SPLASH '15*, Pittsburgh, PA.
Demonstration on "Fraglight: Shedding Light on Broken Pointcuts in Evolving Aspect-Oriented Software." *See bit.ly/splash15demo*.

September 2015 **NYC Media Lab 2015 Annual Summit, New York City Media Laboratory, NYU Skirball Center for the Performing Arts**, *New York, NY*.
Demonstration on "Fraglight: Shedding Light on Broken Pointcuts in Evolving Aspect-Oriented Software." *See bit.ly/nycmedia15*.

September 2015 **Razorfish Global Technology Summit**, *New York, NY*.
Demonstration on "Fraglight: Shedding Light on Broken Pointcuts in Evolving Aspect-Oriented Software." *See bit.ly/razorfish15*.

June 2015 **National Science Foundation (NSF)/Department of Defense (DoD) Research Experience for Undergraduates (REU) at College of Staten Island (CSI), City University of New York (CUNY): Computational Methods in High Performance Computing with Applications to Computer Science**, *Staten Island, NY*.
Presentation on "Automatic Migration of Legacy Java Method Implementations to Interfaces." *See www.cs.csi.cuny.edu/REU*.

June 2015 **Core Software Group, Department of Creative Informatics, Graduate School of Information Science and Technology, The University of Tokyo**, *Tokyo, Japan*.
Presentation on "Open Problems in Automatically Refactoring Legacy Java Software to use New Features in Java 8." *See bit.ly/csg2015*.

June 2015	**Programming Research Group, Department of Mathematical and Computing Sciences, Graduate School of Information Science and Engineering, Tokyo Institute of Technology**, *Tokyo, Japan*. Presentation on "Open Problems in Automatically Refactoring Legacy Java Software to use New Features in Java 8." *See goo.gl/IWqJWw*.
March 2015	**New York City College of Technology, City University of New York**, *Brooklyn, NY*. Presentation on "Introduction to New Features in Java 8." *See bit.ly/java8-intro*.
November 2014	**New York City College of Technology, City University of New York**, *Brooklyn, NY*. Poster on "Fraglight: Shedding Light on Broken Pointcuts in Aspect-Oriented Software" at the 12th Annual Poster Session of Faculty and Student Research and Faculty Publications Exhibit, Faculty Recognition Day. *See bit.ly/facday*.
November 2014	**New York City College of Technology, City University of New York**, *Brooklyn, NY*. Presentation on "Fraglight: Shedding Light on Broken Pointcuts in Evolving Aspect-Oriented Software." *See bit.ly/fraglight*.
March 2014	**State University of New York College at Old Westbury**, *Old Westbury, NY*. Presentation on "Techniques for Automated Software Evolution."
March 2014	**Quinnipiac University**, *Hamden, CT*. Presentation on "Objective-C for Java Developers." *See bit.ly/obj-c_java*.
February 2014	**Milwaukee School of Engineering**, *Milwaukee, WI*. Presentation on "Objective-C for Java Developers."
September 2012	**Apple Inc.**, *Cupertino, CA*. Presentation on "Unit Testing with Xcode."
April 2011	**Ohio State University**, *Columbus, OH*. PhD thesis defense on "Techniques for Automated Software Evolution."
November 2010	**Johns Hopkins University Applied Physics Laboratory (JHU APL)**, *Columbia, Maryland*. Presentation on "Techniques for Automated Evolution of Aspect-Oriented Software."
September 2010	**25th IEEE/ACM International Conference on Automated Software Engineering (ASE)**, *Antwerp, Belgium*. Tool demonstration, presentation, and poster on "Enumeration Refactoring: A Tool for Automatically Converting Java Constants to Enumerated Types." *See slidesha.re/enum-tool*.
August 2010	**Chiba Shigeru Programming Languages and Operating Systems Research Group, Department of Mathematical and Computing Sciences, Graduate School of Information Science and Engineering, Tokyo Institute of Technology**, *Tokyo, Japan*. Presentation on "Future Endeavors in Automated Refactoring of Legacy Java Software to Enumerated Types." *See slidesha.re/enum-future*.
July 2010	**Principles of Software Languages (POSL) Research Group, Kyushu University**, *Fukuoka City, Japan*. Presentation on "Fraglight: Shedding Light on Broken Pointcuts in Aspect-Oriented Software."
July 2010	**Computing System Research Group, Graduate School of Arts and Sciences, University of Tokyo**, *Tokyo, Japan*. Presentation on "Pointcut Rejuvenation: Recovering Pointcut Expressions in Evolving Aspect-Oriented Software." *See slidesha.re/rejuvpc*.
June 2010	**Japan Society for the Promotion of Science (JSPS) Summer Program Research Proposal Session**, *The Graduate University for Advanced Studies (Sokendai), Hayama, Japan*. Poster on "Fraglight: Shedding Light on Broken Pointcuts in Aspect-Oriented Software."
November 2009	**24th IEEE/ACM International Conference on Automated Software Engineering (ASE)**, *Auckland, New Zealand*. Poster on "Pointcut Rejuvenation: Recovering Pointcut Expressions in Evolving Aspect-Oriented Software."

November 2009	**5th Asian Workshop on Aspect-Oriented and Modular Software Development (AOAsia) at the 24th International Conference on Automated Software Engineering (ASE)**, *Auckland, New Zealand.*
	Presentation on "Specifying Reusable Aspects." *See slidesha.re/reuse-aop.*
March 2009	**8th International Conference on Aspect-Oriented Software Development (AOSD)**, *Charlottesville,VA.*
	Invited tool demonstration of "Rejuvenate Pointcut: A Tool for Pointcut Expression Recovery in Evolving Aspect-Oriented Software." *See slidesha.re/aosd09.*
March 2009	**8th International Conference on Aspect-Oriented Software Development (AOSD)**, *Charlottesville,VA.*
	Poster on "Enforcing Behavioral Constraints in Evolving Aspect-Oriented Programs."
October 2008	**2nd International Workshop on Assessment of Contemporary Modularization Techniques (ACoM) at the 23rd ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA)**, *Nashville, Tennessee.*
	Presentation on "On the Assessment of Pointcut Design in Evolving Aspect-Oriented Software." *See slidesha.re/pc-des.*
September 2008	**8th IEEE International Working Conference on Source Code Analysis and Manipulation (SCAM)**, *Beijing, China.*
	Tool demonstration on "Rejuvenate Pointcut: A Tool for Pointcut Expression Recovery in Evolving Aspect-Oriented Software." *See slidesha.re/rejuvpc-tool.*
April 2008	**7th International Conference on Aspect-Oriented Software Development (AOSD)**, *Brussels, Belgium.*
	Poster on "Pointcut Rejuvenation: Recovering Pointcut Expressions in Evolving Aspect-Oriented Software."
April 2008	**7th International Workshop on Foundations of Aspect-Oriented Languages (FOAL) at the 7th International Conference on Aspect-Oriented Software Development (AOSD)**, *Brussels, Belgium.*
	Presentation on "Enforcing Behavioral Constraints in Evolving Aspect-Oriented Programs." *See slidesha.re/aop-beh.*
March 2008	**Computing Department, Lancaster University**, *Lancaster, UK.*
	Computing's Advanced Knowledge Extension Seminars (CAKES) presentation on "Rely, Guarantee, Enrich: An Approach to Modular Reasoning About Aspect-Oriented Programs."
October 2007	**23rd IEEE International Conference on Software Maintenance (ICSM)**, *Paris, France.*
	Presentation on "Automated Refactoring of Legacy Java Software to Enumerated Types." *See slidesha.re/enum-refact.*
August 2007	**Bell Laboratories, Alcatel-Lucent**, *Murray Hill, NJ.*
	Summer intern presentation on an "Overview of a Session Data Type (SDT) Framework Research Prototype."
July 2007	**2nd European Summer School on Aspect-Oriented Software Development**, *Department of Informatics and Information Science (DISI), University of Genoa, Italy.*
	Led group discussion and displayed a poster on current progress of "Modular Reasoning about Aspect-Oriented Programs: A Rely-Guarantee Approach."
April 2007	**Ohio Graduate Student Symposium on Computer and Information Science & Engineering (OGSS-CISE)**, *University of Cincinnati, Cincinnati, OH, USA.*
	Presentation on "Modular Reasoning about Aspect-Oriented Programs: A Rely-Guarantee Approach." *See slidesha.re/ogss-cise.*
March 2007	**5th International Workshop on Software Engineering Properties of Languages and Aspect Technologies (SPLAT) at the 6th International Conference on Aspect-Oriented Software Development (AOSD)**, *Vancouver, BC, Canada.*
	Presentation on "Rely-Guarantee Approach to Reasoning about Aspect-Oriented Programs." *See slidesha.re/rg-aop.*

Students Advised

Current Research Students

2016–	David Morant	*BA 2017*

Past Research Students

2016	Walter Rada	*BTech 2015, now Data Network Production Support Analyst Intern at TD Ameritrade*
2015–2016	Olivia Moore	*BTech 2016, NSF LSAMP scholar (Fall 2015–Spring 2016)*
2015	Md Arefin	*BTech 2016, Google Summer of Code, Emerging Scholar, 2016 valedictorian, now Technology Full-time Analyst at JPMorgan Chase & Co.*
2015	Egor Kozitski	*BTech, Emerging Scholar, now student at Rochester Institute of Technology*

Grants and Awards

2016	City University of New York (CUNY) Office of the Vice Chancellor for Research Travel Funds Program Recipient ($895 US).
2016	NSF ICSE 2016 Travel Award Recipient ($1,346 US).
2016	PSC-CUNY Research Award (Traditional A, TRADA-47-255) Recipient as sole investigator ($3,499.02 US). *Automatic Migration of Legacy Java Method Implementations to Interfaces.*
2015	City University of New York (CUNY) Diversity Projects Development Fund (DPDF) Grant Recipient as sole investigator ($5,000 US). *Design for a Cloud-based Java IDE for Teaching Minorities.*
2015	New York City College of Technology, City University of New York Open Educational Resources (OER) Initiative Fellowship Recipient (23 hours at the 60% non-teaching adjunct faculty rate).
2007,2008(2), 2009,2015	ACM SIGPLAN Professional Activities Committee (PAC) Travel Grant Recipient ($2,021 US).
Spring 2015,Fall 2015	New York City College of Technology, City University of New York Professional Development Advisory Council (PDAC) Travel Award Recipient ($2,150 US).
2015	Tokyo Institute of Technology Research Abroad and Invitational Program for the Promotion of International Joint Research Award Recipient (¥328,480).
2009,2010	ACM SIGSOFT CAPS Program Travel Grant Recipient ($2,300 US).
2010	Japan Society for the Promotion of Science (JSPS) Summer Program Fellowship Recipient (¥692,500).
2010	National Science Foundation (NSF) East Asia and Pacific Summer Institutes (EAPSI) Award Recipient ($5,000 US).
2010	Ohio State University Department of Computer Science & Engineering Graduate Teaching (Eleanor Quinlan Memorial) Award Recipient ($500 US).
2010	Ohio State University Graduate Associate Teaching Award Nominee.
2008,2009	Lancaster University Faculty of Science & Technology Travel Grant Recipient (£300).
2008	European Network of Excellence on Aspect-Oriented Software Development Student Grant Recipient (€300).
2007	Visiting Studentship in Aspect-Oriented Software Analysis and Design, Computing Department, Lancaster University, UK (£8,000).
2004	Monmouth University Outstanding Undergraduate Computer Science Student Award Recipient.

Professional Affiliations

JSPS US	Regular Member, Japan Society for the Promotion of Science (JSPS) US Alumni Association.
ACM	Member, Association for Computing Machinery.

| SIGPLAN | Member, ACM Special Interest Group for Programming Languages. |
| SIGSOFT | Member, ACM Special Interest Group on Software Engineering. |

Volunteering

June 2015–	**Worship Arts Team Member**, *Journey Church New York City*, New York, NY.
	Monthly vocal performances preceding church services.
December 2014–January 2015	**Technology Volunteer**, *Learning Disabilities Association*, New York, NY.
	Assisted with technology needs during organization close-down.
September 2012–August 2014	**Technology Volunteer**, *Journey Church San Francisco*, San Francisco, CA.
	Assisted with website and podcast maintenance and improvement and mobile application development.