

Kunal Taneja

#2834-103 Avent Ferry Road
Raleigh, NC, 27606

919-601-3473

ktaneja-at-ncsu.edu

<http://www4.ncsu.edu/~ktaneja>

1) EDUCATION

- **North Carolina State University**
Raleigh, NC
PhD, Computer Science, since August, 2006
(GPA 4.00/4.00)
Advisor: Tao Xie
Thesis: “**Effective Automated Regression Test Input and Oracle Generation**”
August, 2006 - ?
- **Indian Institute of Technology, Guwahati**
Guwahati, India
Bachelor of Technology,
Computer Science & Engineering
(C.P.I – 7.07/10)
July, 2000 - May, 2004

2) WORK EXPERIENCE

- **Intern, IBM TJ Watson Research Center (May-August 2008)** - Worked as an intern to Dr Amit Paradkar and Dr Avik Sinha at IBM Research.
Description: Developed techniques and an Eclipse plug-in for “Dynamic and Static Characterization of SCA-based Web Services”
- **Intern, Avaya Labs Research (May-August 2007)** - Worked as an intern to Dr David Weiss and Dr Joann Ordille at Avaya Labs Research
Description: Worked on the research project “Economic and Portfolio Issues in the Design of Software Product Lines”
- **Research Assistant, RCOST, Benevento, Italy (April 2005 - March 2006)** - Worked as a Research Assistant to Dr Massimiliano Di Penta at Research Centre for Software Technology (RCOST), Benevento, Italy
Description: Worked on two research projects: “Search-Based Composition of Web services” and “Search-Based Inference of Dialect Grammars”.
- **Software Engineer, Induslogic (Now GlobalLogic), Noida, India (August, 2004 - March 2005)**
Description: Worked as a Software Engineer at Induslogic Inc (Now GlobalLogic) where I develop applications for SIM Cards.
- **Intern, CWI Amsterdam (May-July 2003)** - Worked as an Intern to Dr Paul Klint at Software Engineering Group, CWI Amsterdam.

Description: Developed an Eclipse plug-in for ASF+SDF Meta Environment

3) TEACHING EXPERIENCE

- Teaching Assistant for Graduate "Software Engineering" Course (CSC 510) at NCSU (Fall, 2006 Semester)
- Teaching Assistant for Undergraduate "Theory of Computation" Course (CSC 333) at NCSU (Spring, 2007 Semester)
- Teaching Assistant for Graduate "Software Testing and Reliability" Course (CSC 712) at NCSU (Fall, 2008)

4) RESEARCH INTEREST

- Regression Testing
- Automated Test Generation
- Software Evolution
- Service and Component-Based Software Engineering
- Search-Based Software Engineering

5) PUBLICATIONS

5.1 Journals

- Massimiliano Di Penta, Pierpaolo Lombardi, **Kunal Taneja**, Luigi Troiano, "Search Based Inference of Dialect Grammars", accepted at Applied Soft Computing Journal.
- Lerina Aversano, Massimiliano Di Penta, **Kunal Taneja** - "A Genetic Programming Approach to Support the Design of Service Compositions" to appear in the special issue on "Engineering Design and Composition of Service-Oriented Applications" of the International Journal of Computer Systems Science & Engineering.

5.2.1 Conferences: Research Paper Tracks

- **Kunal Taneja** and Tao Xie - "DiffGen: Automated Regression Unit-Test Generation" - To appear in Proceedings of the 23rd IEEE/ACM International Conference on Automated Software Engineering (ASE 2008), Short Paper, L'Aquila, Italy, September 2008.
- **Kunal Taneja**, Danny Dig, and Tao Xie - "Automated Detection of API Refactorings in Libraries" - To appear in Proceedings of the 22nd IEEE/ACM International Conference on Automated Software Engineering (ASE 2007), Short Paper, Atlanta, Georgia, November 2007.
- Massimiliano Di Penta, **Kunal Taneja** - "Towards the Automatic Evolution of Reengineering Tools" - In proceedings of the European Conference on Software Maintenance and Reengineering (CSMR 2005), Short Paper, Manchester, UK, pages 241-244, IEEE CS Press, , Mar 2005.

5.2.2 Conferences: Other Tracks

- **Kunal Taneja**, Tao Xie, Nikolai Tillmann, Jonathan de Halleux, and Wolfram Schulte - "Guided Path Exploration for Regression Test Generation" - To appear in *Proceedings of the 31st International Conference on Software Engineering (ICSE 2009)*, New Ideas and Emerging Results, Vancouver, Canada, May 2009.

5.3 Workshops

- Tao Xie, Mithun Acharya, Suresh Thummalapenta, and **Kunal Taneja**. - "Improving Software Reliability and Productivity via Mining Program Source Code." To appear in Proceedings of the NSF Next Generation Software Program Workshop at IPDPS 2008 (NSFNGS 2008), Miami, Florida, April 2008.
- Tao Xie, **Kunal Taneja**, Shreyas Kale, and Darko Marinov - "Towards a Framework for Differential Unit Testing of Object-Oriented Programs" - In Proceedings of the 2nd International Workshop on Automation of Software Test (AST 2007), Minneapolis, MN, pp. 5-11, May 2007.
- Lerina Aversano, Massimiliano Di Penta, **Kunal Taneja** - A Genetic Programming Approach to Support the Design of Service Compositions" - First International Workshop on Engineering Service Compositions - December 12th 2005, Amsterdam, The Netherlands.

5.4 Technical Reports

- Nuo Li, **Kunal Taneja**, Tao Xie, "Multiple-Implementation Testing of User-Input Validators." - submitted for publication to a conference.
- Kunal Taneja and Tao Xie, "Automated Generation of Regression Tests" - to be submitted to a Journal

6) COURSEWORK

- **Graduate** - Software Testing & Reliability (A+), Compiler Construction (A+), Design and analysis of Algorithms (A-), Special topics in Software testing and analysis (A), Computer Networks (A), Internet Protocols (A+), Computer & Network Security (A-), Automated Learning & Data Analysis (A+), Automata, Languages & Computability Theory (A+).
- **UnderGraduate(Major)** - Software Engineering, Compilers, Programming Languages, Operating System, Databases, Algorithms, Computer Architecture, Digital Design, Theory of Computation, Formal Languages & Automata Theory, Computer Networks, Computer & Network Security, WireLess Networks, Discrete Mathematics

7) COMPUTER SKILLS

- **Languages** - Java, C#, C++, C, Perl
- **Tools** - Eclipse, JUnit, JavaCC, , Lex, Yacc, MSR Pex, Websphere
- **Operating Systems** - Windows 98/2000/NT/XP, Linux(Red Hat and Debian)

8) MAJOR PROJECTS

- Automatic Regression Unit Test Generation (Currently working with Dr Tao Xie)
This project is funded from the National Science Foundation Award CCF-0725190, Science of Design Program (01/01/2008-12/31/2010)
Project Webs: <http://ase.csc.ncsu.edu/projects/testevo/>
<http://ase.csc.ncsu.edu/projects/regtestgen/>
- Static and Dynamic Characterization of Webservices (Working since May, 2008 with Dr Amit Pradkar and Dr Avik Sinha from IBM Research)
- Refactoring Detection for Libraries(Working since September 2006 to March, 2007 with Dr Tao Xie (NCSU), Danny Dig (UIUC))
- Search-Based Inference for Dialect Grammars (Worked since April, 2005 to March, 2006 with Dr Massimiliano Di Penta (RCOST))
- Search-Based Composition of Web Services (Worked since April, 2005 to March, 2006 with Dr Massimiliano Di Penta and Dr Lerina Aversano(RCOST))

9) AWARDS AND HONORS

- 2007: N.C. State University Outstanding Teaching Assistant Award.
- 2006: Awarded complete five year assistantship for PhD program by North Carolina State University.
- 2000: Achieved an all India Rank of 713 among 120,000 candidates who appeared for Joint Entrance Examination, for Indian Institutes of Technologies.
- Currently Mentoring Undergrad Students from Minorities in Computer Science.

10) CONFERENCE PEER CO-REVIEWER

- International Conference on Software Testing (ICST), 2009
- International Conference on Automated Software Engineering (ASE), 2008
- International Conference on Software Maintenance (ICSM), 2008
- International Symposium on Software Testing and Analysis (ISSTA), 2008
- International Conference on Software Testing (ICST), 2008

11) POSTERS AND PRESENTATIONS

- Kunal Taneja, Tao Xie - "DiffGen: Automated Regression Unit-Test Generation", Poster Presentation at IBM University Day 2008.
 - Kunal Taneja - "Regression Testing" - Class lecture at the CSC 712 graduate course, September 2008.
 - Kunal Taneja - "Static and Dynamic Characterization of Webservices", Summer intern talk at IBM T. J. Watson Research Center, Aug 2008.
 - Kunal Taneja, Tao Xie - "DiffGen: Automated Regression Unit-Test Generation", Poster Presentation at ASE 2008.
 - Kunal Taneja - "Economic and Portfolio Issues in the Design of Software Product Lines" Summer intern talk at Avaya Labs Research, Aug 2007.
 - Kunal Taneja, Danny Dig, Tao Xie - "Automated Detection of API Refactorings in Libraries", Poster Presentation at ASE 2007.
-