

## Kunal Taneja

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1500-104 Graduate Ln., Raleigh, NC 27606  
(919) 601-3473

**OBJECTIVE** To find a full time position.

**EDUCATION** *PhD*, Computer Science  
North Carolina State University, Raleigh, NC (Expected in 2011)  
*Thesis*: Effective Automated Regression Test Input and Oracle Generation  
*Advisor*: Tao Xie

*Master of Science*, Computer Science  
North Carolina State University, Raleigh, NC (2006-2008)  
GPA: 4.0/4.0

*Bachelor of Science*, Computer Science  
Indian Institute of Technology, Guwahati, India (2000-2004)  
CPI: 7.1/10

**EXPERIENCE** *Intern* Summer 2010  
Accenture Technology Labs, Chicago, IL.  
Mentor: Dr Mark Grechanik  
Project: Testing Software In Age Of Data Privacy: A Balancing Act.

*Intern* Summer 2009  
US Food and Drug Administration, Silver Spring, MD.  
Mentor: Dr Yi Zhang  
Project: Automated Mock Object Generation for Testing Database Applications.

*Intern* Summer 2008  
IBM Research, Hawthorne, NY  
Mentors: Dr Avik Sinha and Dr Amit Paradkar  
Project: Dynamic and Static Characterization of SCA-based Web Services.

*Intern* Summer 2007  
Avaya Labs, Basking Ridge, NJ  
Mentor: Dr David Weiss and Dr Joann Ordille  
Project: Economic and Portfolio Issues in the Design of Software Product Lines.

*Research Assistant* April 2005 - March 2006  
Research Center for Software Technology, Benevento, Italy  
Mentor: Dr Massimiliano Di Penta  
Projects: Search-Based Composition of Web services and Search-Based Inference of Dialect Grammars

*Software Engineer* August, 2004 - March 2005  
Induslogic Inc., Noida, India  
Projects: Developed applications for SIM Cards

**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:* 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

## COMPUTER SKILLS

*Languages & Software:* Java, C#, C++, C, Perl, Eclipse, Visual Studio, JUnit, JavaCC, JCute, Lex, Yacc, MySQL, Pex.

## Research Interests

- Regression Testing
- Automated Test Generation
- Static and Dynamic Code Analysis
- Data Mining

## 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)

## Publications

### Journals

- Massimiliano Di Penta, Pierpaolo Lombardi, **Kunal Taneja**, Luigi Troiano, "Search Based Inference of Dialect Grammars", *Soft Computing Journal, Special Issue on Software Engineering and Soft Computing*, 12(1), pp. 51-66, 2008, Springer.
- Lerina Aversano, Massimiliano Di Penta, **Kunal Taneja**, "A Genetic Programming Approach to Support the Design of Service Compositions" - *International Journal of Computer Systems Science and Engineering*, 2006.

### Conferences : Research Paper Tracks

- **Kunal Taneja**, Yi Zhang, and Tao Xie, MODA: Automated Test Generation for Database Applications via Mock Objects - *In Proceedings of the 25th IEEE/ACM International Conference on Automated Software Engineering (ASE 2010), Short Paper, Antwerp, Belgium, September 2010.*
- **Kunal Taneja**, Nuo Li, Madhuri Marri, Tao Xie, and Nikolai Tillmann, MiTV: Multiple-Implementation Testing of User-Input Validators for Web Applications - *In Proceedings of the 25th IEEE/ACM International Conference on Automated Software Engineering (ASE 2010), Short Paper, Antwerp, Belgium, September 2010.*
- **Kunal Taneja** and Tao Xie, DiffGen: Automated Regression Unit-Test Generation - *In Proceedings of the 23rd IEEE/ACM International Conference on Automated Software Engineering (ASE 2008), Short Paper, L'Aquila, Italy, pp. 407-410, September 2008.*

- **Kunal Taneja**, Danny Dig, and Tao Xie, "Automated Detection of API Refactorings in Libraries -In *Proceedings of the 22nd IEEE/ACM International Conference on Automated Software Engineering (ASE 2007)*, Short Paper, Atlanta, Georgia, pp. 377-380, 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.

## Conferences : Other Paper Tracks

- **Kunal Taneja**, Tao Xie, Nikolai Tillmann, Jonathan de Halleux, and Wolfram Schulte, Guided Path Exploration for Regression Test Generation - *In Companion Proceedings of the 31st International Conference on Software Engineering (ICSE 2009)*, *New Ideas and Emerging Results*, Vancouver, Canada, pp. 311-314, May 2009.

## Workshops

- Tao Xie, Mithun Acharya, Suresh Thummalapenta, and **Kunal Taneja**, "Improving Software Reliability and Productivity via Mining Program Source Code." *In Proceedings of the NSF Next Generation Software Program Workshop at IPDPS 2008 (NSFNIGS 2008)*, Miami, Florida, pp. 1-5, 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*.

## Technical Reports

- **Kunal Taneja**, Tao Xie, Nikolai Tillmann, Jonathan de Halleux, Wolfram Schulte, eXpress: Guided Path Exploration for Regression Test Generation - *Submitted for publication*.

## 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.
- Mentored undergrad students from minorities in computer science.

**Conference Peer  
Co reviewer**

- International Conference on Software Maintenance (ICSM), 2010
- International Conference on Automated Software Engineering (ASE), 2010.
- 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

**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 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.