

Dr. Junaid Haroon Siddiqui

Assistant Professor of Computer Science
LUMS School of Science and Engineering, Lahore, Pakistan
Tel: +92 423 560 8197, Email: junaid.siddiqui@lums.edu.pk

— Education —

The University of Texas at Austin, Austin, TX, USA

Ph.D. Computer Science (Fall 2007 – Spring 2012)

Thesis: [Improving systematic constraint-driven analysis using incremental and parallel techniques](#)

Adviser: Dr. Sarfraz Khurshid.

GPA: 3.95/4.00.

National University of Computer and Emerging Sciences (FAST-NU), Lahore, Pakistan

M.S. Computer Science (Fall 2001 – Spring 2003)

Thesis: Decentralized key management for large dynamic multicast groups using distributed balanced trees

Gold medal with GPA 3.83/4.00.

96th percentile GRE Computer Science.

B.S. Computer Science (Spring 1998 – Fall 2001)

Senior Project: PSTN gateway for Voice over IP

Silver medal with cumulative GPA 3.86/4.00 and major GPA 4.00/4.00.

Teaching Assistant (Spring 2000, Summer 2000, Fall 2000, Spring 2001, Summer 2001, Fall 2001)

Won SOFTEC '00, PROCOM '00, PROCOM '99 programming competitions.

— Experience —

LUMS School of Science and Engineering, Lahore, Pakistan.

Assistant Professor (August 2012 – Now)

Leading a research group on [Program Analysis](#), teaching classes, and member of both university and department undergraduate curriculum committees.

The University of Texas at Austin, Austin, TX, USA

Adjunct Professor (Summer 2013)

Google Inc., Kirkland, WA, USA.

Software Engineering Intern (Summer 2011)

Microsoft Corp., Redmond, WA, USA.

Research Intern (Summer 2010)

National University of Computer and Emerging Sciences (FAST-NU), Lahore, Pakistan

Full-time Instructor (January 2004 – July 2004)

Research Officer (August 2001 – July 2002)

Research Assistant (Summer 2001)

Software Industry in Lahore, Pakistan

Software Architect at Vahzay Pvt. Ltd. (split from MetaApp) (August 2006 – June 2007)

Manager Software Development at MetaApp Pvt. Ltd. (August 2004 – July 2006)

Owner/Director at Simitrix Pvt. Ltd. (July 2002 – July 2004)

Software Engineer at Esstec Pvt. Ltd (April 2000 – May 2001)

— Publications (Google Scholar) —

- [1] M. S. Mahmood, M. A. Ghafoor, and J. H. Siddiqui. [Symbolic Execution of Stored Procedures in Database Management Systems](#). To appear in *Proc. of the 31st IEEE/ACM International Conference on Automated Software Engineering (ASE 2016)*, Singapore, pages 524–535, 2016. (Acceptance rate: 19%, 57/298)
- [2] M. A. Ghafoor, M. S. Mahmood, and J. H. Siddiqui. [Effective Partial Order Reduction in Model Checking Database Applications](#). In *Proc. of the 9th IEEE International Conference on Software Testing, Verification, and Validation, (ICST 2016)*, 2016. (Acceptance rate: 27%, 35/130)
- [3] W. Rehman, M. S. Ayub, and J. H. Siddiqui. [Verification of MPI Java programs using Software Model Checkings](#). In *Proc. of the 21st ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming, (PPoPP 2016)*, Barcelona, Spain, 2016.
- [4] S. Makhdoom, M. A. Khan, and J. H. Siddiqui. [Incremental symbolic execution for automated test suite maintenance](#). In *Proc. of the 29th IEEE/ACM International Conference on Automated Software Engineering (ASE 2014)*, 2014.
- [5] J. H. Siddiqui and S. Khurshid. [Scaling symbolic execution using staged analysis](#). *J. Innovations in Systems and Software Engineering* Volume 9, Issue 2 (2013), Page 119-131, (Journal version of [7]).
- [6] N. Rosner, J. H. Siddiqui, N. Aguirre, S. Khurshid, and M. F. Frias. [Ranger: Parallel analysis of alloy models by range partitioning](#). In *Proc. of the 28th IEEE/ACM International Conference on Automated Software Engineering (ASE 2013)*, 2013.
- [7] J. H. Siddiqui and S. Khurshid. [Scaling symbolic execution using ranged analysis](#). In *Proc. of the ACM SIGPLAN Conference on Object-oriented Programming, Systems, Languages, and Applications (OOPSLA 2012)*, Tucson, AZ, USA, pages 523–536, 2012. (Acceptance rate: 25%, 57/228) – Nominated for Best Student Paper Award
- [8] J. H. Siddiqui. [Improving systematic constraint-driven analysis using incremental and parallel techniques](#). Ph.D. dissertation, University of Texas at Austin, Austin, TX, USA, 2012.
- [9] D. Funes and S. Khurshid and J. H. Siddiqui. [Ranged Model Checking](#). In *Proc. of the Java Pathfinder Workshop 2012 co-located with the ACM SIGSOFT Conference on Foundations of Software Engineering (FSE 2012)*, Cary, NC, USA, pages 1–5, 2012.
- [10] J. H. Siddiqui, D. Marinov, and S. Khurshid. [Lightweight data-flow analysis for execution-driven constraint solving](#). In *Proc. of the 5th IEEE International Conference on Software Testing, Verification, and Validation, (ICST 2012)*, Montreal, Canada, pages 91–100, 2012. (Acceptance rate: 26%, 39/145)
- [11] J. H. Siddiqui and S. Khurshid. [Staged symbolic execution](#). In *Proc. of the ACM Symposium on Applied Computing — Software Verification and Testing Track (SAC-SVT 2012)*, Trento, Italy, pages 1339–1346, 2012. (Acceptance rate: 27%, 12/43)
- [12] J. H. Siddiqui and S. Khurshid. [Symbolic Alloy](#). In *Proc. of the 13th International Conference on Formal Engineering Methods (ICFEM)*, Durham, United Kingdom, pages 340–355, 2011. (Acceptance rate: 30%, 31/103)
- [13] M. Z. Malik, J. H. Siddiqui, and S. Khurshid. [Constraint-based program debugging using data structure repair](#). In *Proc. of the 4th IEEE International Conference on Software Testing, Verification, and Validation (ICST)*, Berlin, Germany, pages 190–199, 2011. (Acceptance rate: 21%, 35/166)
- [14] J. H. Siddiqui and S. Khurshid. [ParSym: Parallel symbolic execution](#). In *Proc. of the 2nd IEEE International Conference on Software Technology and Engineering (ICSTE)*, San Juan, PR, USA, pages 405–409, 2010.
- [15] J. H. Siddiqui and S. Khurshid. [An empirical study of structural constraint solving techniques](#). In *Proc. of the 11th International Conference on Formal Engineering Methods (ICFEM)*, Rio de Janeiro, Brazil, pages 88–106, 2009. (Acceptance rate: 29%, 36/121)
- [16] J. H. Siddiqui, D. Marinov, and S. Khurshid. [Optimizing a structural constraint solver for efficient software checking](#). In *Proc. of the 24th IEEE/ACM International Conference on Automated Software Engineering (ASE)*, Auckland, New Zealand, pages 615–619, 2009. (Acceptance rate: 31%, 71/222)
- [17] J. H. Siddiqui and Sarfraz Khurshid. [PKorat: Parallel generation of structurally complex test inputs](#). In *Proc. of the 2nd IEEE International Conference on Software Testing, Verification, and Validation (ICST)*, Denver, CO, USA, pages 250–259, 2009. (Acceptance rate: 33%)
- [18] J. H. Siddiqui, M. F. Iqbal, and D. Chiou. [Parallel assertion processing using memory snapshots](#). In *Proc. of the 5th Workshop on Unique Chips and Systems (UCAS5) held in conjunction with IEEE International Symposium on Performance Analysis of Systems and Software (ISPASS 2009)*, Boston, MA, USA, pages 69–75, 2009.

— Teaching —

LUMS School of Science and Engineering

Foundations of Computer Systems (Fall 2016)
Advanced Programming (Spring 2015, Spring 2016, Summer 2016)
Advanced Operating Systems (Graduate course) (Spring 2013, Spring 2014, Spring 2015, Spring 2016)
Multicore Computing (Graduate course) (Fall 2015)
Reliable Software (Graduate course) (Fall 2014)
Algorithms (Spring 2014)
Introduction to Programming (Fall 2013)
Software Testing (Graduate course) (Spring 2013)

The University of Texas at Austin, Austin, TX, USA

Algorithms (Summer 2013)

Virtual University of Pakistan, Lahore, Pakistan

Visual Programming (Spring 2013)

National University of Computer and Emerging Sciences (FAST-NU), Lahore, Pakistan

Advanced Programming Topics (Spring 2006)
Assembly Language Programming (Spring 2006, Fall 2003, Summer 2002, Fall 2001)
Data Structures (Fall 2005)
Object Oriented Programming (Spring 2004, Summer 2003, Spring 2003)
Operating Systems (Spring 2007, Fall 2005, Spring 2002)

Kinnaird College for Women, Lahore, Pakistan

Operating Systems (Spring 2002)

Beaconhouse Informatics Computer School, Lahore, Pakistan

Systems Development (Summer 2001)

— Service —

- 2016 Reviewer for TSE (IEEE Transactions on Software Engineering).
Program Committee ICST 2016 (IEEE International Conference on Software Testing).
External Review Panel ASE 2016 (IEEE/ACM International Conference on Automated Software Engineering).
LUMS University undergraduate curriculum committee (2014–Now).
LUMS Computer Science undergraduate curriculum committee (2014–Now).
- 2015 Program Committee ICST 2015 (IEEE International Conference on Software Testing).
Judge ACM International Collegiate Programming Contest, Lahore Regional (ICPC).
- 2014 Program Committee ISSRE 2014 (IEEE International Symposium on Software Reliability Engineering).
Chief Judge ACM International Collegiate Programming Contest, Lahore Regional (ICPC).
Judge SoftExpo 2014 Software Exhibition. Judge SOFTEC 2014 Software Competition.
- 2013 Reviewer for TSE (IEEE Transactions on Software Engineering).
Program Committee INMIC 2013 (IEEE International Multi-topic Conference).
Judge SOFTEC 2013 Software Competition.
- 2012 Reviewer for SQL (Software Quality Journal).
Co-reviewer ASE 2012, FM 2012, FSE 2012, ICST 2012.
- 2011 Co-reviewer FM 2011, ICST 2011, ISSTA 2011, NFM 2011, and TSE Journal.
- 2010 Co-reviewer RV 2010.
- 2009 Co-reviewer ASE 2009, OOPSLA 2009.
- 2007 Judge SOFTEC 2007 Programming Competition.
- 2006 Judge SOFTEC 2006 Programming Competition.