

# Rahul Purandare

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CONTACT INFORMATION	<p>School of Computing University of Nebraska–Lincoln 362 Avery Hall 1144 T Street Lincoln, NE, 65888-0115</p>	<p>Phone: +1(402)-472-5005 <a href="mailto:rahul@unl.edu">rahul@unl.edu</a> <a href="#">Short Faculty Profile</a></p>
RESEARCH INTERESTS	Static and Dynamic Program Analysis, Program Verification, AI for Software Engineering, Software Testing, Program Comprehension, Program Optimization.	
RESEARCH OUTLINE	My research is focused on developing tools and techniques to help developers build robust, maintainable, and secure software. In order to develop these tools, I use program analysis, sometimes in combination with deep learning and natural language processing techniques.	
EDUCATION	<p><b>University of Nebraska - Lincoln, USA</b></p> <p>Doctor of Philosophy, <a href="#">Department of Computer Science and Engineering</a></p> <ul style="list-style-type: none"><li>• Dissertation Title: <i>Exploiting Program and Property Structure for Efficient Runtime Monitoring</i></li><li>• Adviser: <a href="#">Professor Matthew B. Dwyer</a></li><li>• Area of Study: Computer Science</li></ul> <p><b>University of Pune, India</b></p> <p>Master of Technology, <a href="#">Computer Science Department</a></p> <ul style="list-style-type: none"><li>• Area of Study: Computer Science</li></ul> <p><b>Govt. College of Engineering, Pune, India</b></p> <p>Bachelor of Engineering, <a href="#">Department of Electrical Engineering</a></p> <ul style="list-style-type: none"><li>• Area of Study: Electrical Engineering</li></ul>	
ACADEMIC APPOINTMENTS	<p><b>Associate Professor</b> <a href="#">School of Computing,</a> <a href="#">University of Nebraska - Lincoln, USA</a></p> <p><b>Research Associate Professor</b> <a href="#">School of Computing,</a> <a href="#">University of Nebraska - Lincoln, USA</a></p> <p><b>Associate Professor</b> <a href="#">Department of Computer Science and Engineering,</a> <a href="#">Indraprastha Institute of Information Technology Delhi (IIIT-D), India</a></p> <p><b>Assistant Professor</b> <a href="#">Department of Computer Science and Engineering,</a> <a href="#">Indraprastha Institute of Information Technology Delhi (IIIT-D), India</a></p> <p><b>Postdoctoral Researcher</b> <a href="#">Department of Computer Science and Engineering,</a> <a href="#">University of Nebraska - Lincoln, USA</a></p>	<p>August 2022 to Present</p> <p>June 2022 to August 2022</p> <p>January 2019 to May 2022</p> <p>July 2013 to December 2018</p> <p>May 2011 to May 2013</p>

**Journals:**

Nikita Mehrotra, Akash Sharma, Anmol Jindal, and **Rahul Purandare**. [Improving Cross-Language Code Clone Detection via Code Representation Learning and Graph Neural Networks](#) In: *IEEE Transactions on Software Engineering (TSE)*, vol. 49, no. 11, pages 4846–4868, November 2023. Accepted for publication as a Journal First paper at ICSE'24.

Ridhi Jain, **Rahul Purandare**, and Subodh Sharma. [BiRD: Race Detection in Software Binaries under Relaxed Memory Models](#). In: *ACM Transactions on Software Engineering and Methodology (TOSEM)*, Volume 31, Issue 4, October 2022, Article No.: 58, pages 1–29, Accepted for presentation as a Journal First paper at ESEC/FSE'22.

Nikita Mehrotra, Navdha Agarwal, Piyush Gupta, Saket Anand, David Lo, and **Rahul Purandare**. [Modeling Functional Similarity in Source Code with Graph-based Siamese Networks](#). In: *IEEE Transactions on Software Engineering (TSE)*, Volume: 48, Issue: 10, 01 October 2022, pages 3771 – 3789, Presented as a Journal First paper at ICSE'22.

Gede Artha Azriadi Prana, Denae Ford, Ayushi Rastogi, David Lo, **Rahul Purandare**, and Nachiappan Nagappan. [Including Everyone, Everywhere: Understanding Opportunities and Challenges of Geographic Gender-inclusion in OSS](#). In: *IEEE Transactions on Software Engineering (TSE)*, Volume: 48, Issue: 9, 01 September 2022, pages 3394 – 3409, Presented as a Journal First paper at ICSE'22.

Devika Sondhi, Mayank Jobanputra, Divya Rani, Salil Purandare, Sakshi Sharma, and **Rahul Purandare**. [Mining Similar Methods for Test Adaptation](#). In: *IEEE Transactions on Software Engineering (TSE)*, Volume: 48, Issue: 7, 01 July 2022, pages 2262 – 2276.

**Conference Proceedings:**

Khushboo Chitre, Piyus Kedia, and **Rahul Purandare**. [Rapid: Region-based Pointer Disambiguation](#). In: *Proceedings of the ACM SIGPLAN International Conference on Object-Oriented Programming Systems, Languages, and Applications (OOPSLA'23)*, October 2023, Accepted for publication.

Dhriti Khanna, Subodh sharma, and **Rahul Purandare**. [Verifying Exception-Handling Code in Concurrent Libraries](#). In: *Proceedings of the 30th Asia-Pacific Software Engineering Conference (APSEC'23)*, December 2023, Accepted for publication.

Piyus Kedia, **Rahul Purandare**, Udit Agarwal, and Rishabh. [CGuard: Scalable and Precise Object Bounds Protection for C](#). In: *Proceedings of the International Symposium on Software Testing and Analysis (ISSTA)*, July 2023, pages 1307–1318.

Khushboo Chitre, Piyus Kedia and **Rahul Purandare**. [The Road Not Taken: Exploring Alias Analysis Based Optimizations Missed by the Compiler](#). In: *Proceedings of the ACM SIGPLAN International Conference on Object-Oriented Programming Systems, Languages, and Applications (OOPSLA'22)*, December 2022, pages 786–810.

Peeyush Kushwaha, **Rahul Purandare** and Matthew B. Dwyer. [Optimal Finite-State Monitoring of Partial Traces](#). In: *Proceedings of the 22nd International Conference on Runtime Verification (RV'22)*, September 2022, pages 124–142.

Devika Sondhi, Avyakt Gupta, Salil Purandare, Ankit Rana, Deepanshu Kaushal, and **Rahul Purandare**. [On Indirectly Dependent Documentation in the Context of Code Evolution: A Study](#). In: *Proceedings of the 43rd IEEE/ACM International Conference on Software Engineering (ICSE'21)*, May 2021, pages 1498–1509.

- Dhriti Khanna, **Rahul Purandare**, and Subodh Sharma. [Synthesizing Multi-threaded Tests from Sequential Traces to Detect Communication Deadlocks](#). In: *Proceedings of the 14th IEEE Conference on Software Testing, Verification and Validation (ICST'21)*, April 2021, pages 1–12.
- Piyush Gupta, Nikita Mehrotra, and **Rahul Purandare**. [JCoffee: Using Compiler Feedback to Make Partial Code Snippets Compilable](#). In: *Proceedings of the 36th IEEE International Conference on Software Maintenance and Evolution (ICSME'20 - Tool Demo)*, September 2020, pages 810–813.
- Devika Sondhi and **Rahul Purandare**. [SEGATE: Unveiling Semantic Inconsistencies between Code and Specification of String Inputs](#). In: *Proceedings of the 34th ACM/IEEE International Conference on Automated Software Engineering (ASE'19)*, November 2019, pages 200–212.
- Devika Sondhi, Divya Rani, and **Rahul Purandare**. [Similarities Across Libraries: Making a Case for Leveraging Test Suites](#). In: *Proceedings of the 12th IEEE International Conference on Software Testing, Verification and Validation (ICST)*, April 2019, pages 79–89.
- Garvita Allabadi, Aritra Dhar, Ambreen Bashir, and **Rahul Purandare**. [METIS: Resource and Context-Aware Monitoring of Finite State Properties](#). In: *Proceedings of the 18th International Conference on Runtime Verification (RV)*, November 2018, pages 167–186 (Received the best paper award).
- Dhriti Khanna, Subodh Sharma, Cesar Rodriguez, and **Rahul Purandare**. [Dynamic Symbolic Verification of MPI Programs](#). In: *Proceedings of the 22nd International Symposium on Formal Methods (FM)*, July 2018: pages 466–484.
- Ridhi Jain, Sai Prathik, Venkatesh Vinayakarao, and **Rahul Purandare**. [A search system for mathematical expressions on software binaries](#). In: *Proceedings of the IEEE/ACM 15th International Conference on Mining Software Repositories (MSR)*, May 2018: pages 487–491.
- Venkatesh Vinayakarao, Anita Sarma, **Rahul Purandare**, Shuktika Jain, and Soumya Jain. [ANNE: Improving Source Code Search using Entity Retrieval Approach](#). In: *Proceedings of the Tenth ACM International Conference on Web Search and Data Mining (WSDM)*, February 2017, pages 211–220.
- Sangeeth Kochanthara, Goeffrey Nelissen, David Pereira, and **Rahul Purandare**. [REVERT: Runtime Verification for Real-Time Systems](#). In: *IEEE Real-Time Systems Symposium (RTSS - Tool Demo)*, November 2016, page 365.
- Rohit Mehra, Vinayak Naik, **Rahul Purandare**, and Kapish Malik. [KIRKE: Re-engineering of Web Applications to Mobile Apps](#). In: *Proceedings of the 13th International Conference on Mobile and Ubiquitous Systems: Computing, Networking and Services (MobiQuitous - Industry Track)*, November 2016, pages 135–142.
- Sukrit Kalra, Ayush Goel, Dhriti Khanna, Mohan Dhawan, Subodh Sharma, and **Rahul Purandare**. [POLLUX: Safely Upgrading Dependent Application Libraries](#). In: *Proceedings of the 24th ACM SIGSOFT International Symposium on Foundations of Software Engineering (FSE)*, November 2016, pages 290–300.
- Aritra Dhar, **Rahul Purandare**, Mohan Dhawan, and Suresh Rangaswami. [Clotho: Saving Programs from Malformed Strings and Incorrect String-Handling](#). In: *Proceedings of the 10th Joint Meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering, (ESEC/FSE)*, September 2015, pages 555–566.

Venkatesh Vinayakarao, **Rahul Purandare**, and Aditya V. Nori. [Structurally Heterogeneous Source Code Examples from Unstructured Knowledge Sources](#). In: *Proceedings of the ACM SIGPLAN 2015 workshop on Partial Evaluation and Program Manipulation (PEPM)*, January 2015, pages 21–26.

Samit Anwer, Aniya Aggarwal, **Rahul Purandare**, and Vinayak Naik. [Chiromancer: A Tool for Boosting Android Application Performance](#). In: *Proceedings of the 1st International Conference on Mobile Software Engineering and Systems (MOBILESoft)*, June 2014, pages 62–65.

Kevin Falzon, Eric Bodden, and **Rahul Purandare**. [Distributed Finite-State Runtime Monitoring with Aggregated Events](#). In: *Proceedings of the 4th International Conference on Runtime Verification (RV)*, September 2013, pages 94–111.

**Rahul Purandare**, Matthew B. Dwyer, and Sebastian Elbaum. [Optimizing Monitoring of Finite State Properties through Monitor Compaction](#). In: *Proceedings of the International Symposium on Software Testing and Analysis (ISSTA)*, July 2013, pages 280–290. (Received ACM Distinguished Paper Award).

**Rahul Purandare**, Javier Darsie, Sebastian Elbaum, and Matthew B. Dwyer. [Conditional Component Dependence Analysis for Distributed Robotics Software](#). In: *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, October 2012, pages 1533–1540.

**Rahul Purandare**, Matthew B. Dwyer, and Sebastian Elbaum. [Monitoring Finite State Properties: Approaches and their Relative Strengths](#). In: *Proceedings of the 2nd International Conference on Runtime Verification (RV)*, September 2011, pages 381–395.

Matthew B. Dwyer, **Rahul Purandare**, and Suzette Person. [Runtime Verification in Context: Can Optimizing Error Detection Improve Fault Diagnosis?](#). In: *Proceedings of the 1st International Conference on Runtime Verification (RV)*, November 2010, pages 36–50.

**Rahul Purandare**, Matthew B. Dwyer, and Sebastian Elbaum. [Monitor Optimization via Stutter-Equivalent Loop Transformation](#). In: *Proceedings of the 25th International Conference on Systems, Programming, Languages and Applications: Software for Humanity (OOPSLA)*, October 2010, pages 270–285.

Matthew B. Dwyer and **Rahul Purandare**. [Residual Checking of Safety Properties](#). In: *Proceedings of the 15th International SPIN Workshop (SPIN)*, August 2008, pages 1–2.

Matthew B. Dwyer and **Rahul Purandare**. [Residual Dynamic Typestate Analysis : Exploiting Static Analysis Results to Reformulate and Reduce the Cost of Dynamic Analysis](#). In: *Proceedings of the 22nd International Conference on Automated Software Engineering (ASE)*, November 2007, pages 124–133.

Matthew B. Dwyer, Sebastian Elbaum, Suzette Person, and **Rahul Purandare**. [Parallel Randomized State-space Search](#). In: *Proceedings of the 28th International Conference on Software Engineering (ICSE)*, May 2007, pages 3–12.

SERVICE TO THE  
COMMUNITY

**Conference Organization Service:**

- ISEC 2023: Program Committee Co-Chair with [Prof. Abhik Roychoudhury \(NUS\)](#)
- ESEC/FSE 2023: Student Volunteer Co-Chair with [Prof. Reyhaneh Jabbarvand \(UIUC\)](#)

**Program Committee Member:**

- 2024 : FSE, ICSE (SEET)
- 2022 : FMCAD, ESEC/FSE, ICSE (SEET, SRC), ISSTA, ISEC
- 2021: ASE, MSR, SCAM, ISEC
- 2020: ASE, MSR, ICSE(NIER), FormaliSE, ISEC
- 2019: ICSE(NIER), MSR, ICSEA, ISEC
- 2018: FormaliSE, COMPSAC-SETA, ISEC
- 2017: ICSE(Demo), ICTAS, ISEC
- 2016: ICSE (Demo), COMPSAC-SETA, ISEC
- 2015: APSEC, ACM Compute, WEPL, ISEC
- 2014: SOAP
- 2013: SOAP

**Editor Service:**

- Journal of Software Engineering Research and Development (JSERD): Associate Editor (2019–2023)

**Referee Service:**

- IEEE Transactions on Software Engineering (TSE): Review Board Member (2017–2023)
- ACM Transactions on Software Engineering and Methodology (TOSEM): Distinguished Review Board Member (2022 – )
- Journal of Automated Software Engineering (ASE): Review Board Member (2021 – )
- Journal of Systems and Software (JSS)
- Journal of Software Testing, Verification and Reliability (STVR)
- Journal of Formal Methods in System Design (FMSD)
- Journal of Software: Practice and Experience
- IET Software
- IET Cyber-Physical Systems: Theory & Applications
- Book: “Lectures on Runtime Verification” published by Springer in 2018 edited by Ezio Bartocci and Ylies Falcone

**Other Service:**

- Steering committee member of the first Software Engineering Research India (SERI) meeting and co-organized it in 2019, 2020, 2021, and 2022. It is organized for students, faculty, and industry professionals working in software engineering to share their work or the state-of-the-art in their area with others.
- Co-organized the first Winter School on Software Engineering (WSSE) in 2017 at TRDDC. It was designed for students and faculty with some background in program analysis or compilers to stimulate their interest in research in this area. Eminent speakers were invited from within as well as outside India.
- Served as an external reviewer for an IIT-Hyderabad PhD thesis, an IIIT-Hyderabad PhD thesis, two IISc Master’s theses, five IIT-Delhi Master’s theses, and a PhD comprehensive examiner for an IIT-Ropar student. Serving as a review committee member of a Ph.D. student at IIT-Delhi and several students at IIIT-Delhi.
- Wrote reference letters for promotion cases from associate to full professor and assistant to associate professor at IITs.
- Served as a referee for DST research grant proposals.
- Served as a panel member for MeitY (Ministry of Electronics and Information Technology) for Scientist promotions.

- *Founding head of the CSE Department: July 2017 to May 2019*
- *Cost Reduction Committee Chair: May 2020 until now*
- *Placement Faculty Coordinator: July 2014 to August 2017*
- *International UG/Master's Programs Committee Member: 2014*
- *Industry interaction committee member: July 2016 to June 2017*
- *Institute's Automation and Software Club Faculty Coordinator: September 2013 to June 2015*
- *Infosys Center for Artificial Intelligence Committee Member: April 2016 to June 2022*
- *Cybersecurity Education and Research Center committee member: August 2014 to January 2017*
- *Academic Affairs Committee: July 2020 to June 2022*

**UNL:**

- *Serving on the Graduate Student committee, Graduate Admissions committee, and Academic Integrity committee*

RELEVANT  
PROFESSIONAL  
EXPERIENCE

- Designed, developed, and maintained web-based, Unix-based, and database applications in C, C++ and PERL5 for Telecom industry.
- Led C cross-compiler development project for a microprocessor designed to run avionics software.
- Led Unix technology consulting group.
- Designed and conducted training programs for software engineers in C, Unix, data structures and algorithms.

**Tech Mahindra Ltd.** Pune, India June 2000 to May 2006

*Senior Consultant and Project Leader*

**British Telecom Plc.**, Ipswich, UK April 1998 to May 2000

*Software Design Engineer and Project Leader*

**Mahindra - British Telecom Ltd.**, Pune, India July 1996 to March 1998

*Software Engineer*

CURRENT  
STUDENTS

**Ph.D. Students (At University of Nebraska – Lincoln):**

- Negar Fathi (Joined Fall 2023)
- Mohammad Jalili Torkamani (Expected to join by Spring 2024)

**Ph.D. Students (At IIIT-Delhi, India):**

- Dhriti Khanna [TCS PhD Fellow, Co-advised with Dr. Subodh Sharma, IIT-Delhi] (Expected graduation date - May'24)
- Ridhi Jain [Visvesvaraya PhD Fellow] (Expected graduation date - May'24)
- Nikita Mehrotra [Prime Minister's PhD Fellow, Partner Company: Nucleus Software, India.] (Expected graduation date - May'24)
- Khushboo Chitre [TCS PhD Fellow, Co-advised with Dr. Piyus Kedia, IIIT-Delhi] (Expected graduation date - May'24)

GRADUATED  
STUDENTS

**Ph.D. Students:**

- Venkatesh Vinayakarao (May 2014 - August 2018) [Prime Minister's Fellow, Partner Company: Microsoft Research, India. Industrial Mentor: Dr. Aditya Nori] (Currently at Chennai Mathematical Institute (CMI)).

- Devika Sondhi (January 2017 - August 2021) [Prime Minister's PhD Fellow, Partner Company: Microsoft Research, India. Industrial Mentor: Dr. Kapil Vaswani] (Currently at IBM India Research Laboratory).

#### **Master's Students:**

- Aritra Dhar ( Completed Ph.D. from ETH, Zurich)
- Aniya Aggarwal (First job at IBM Research, Delhi)
- Samit Anwer (First Job at Citrix R&D, Bangalore)
- Ambreen Bashir (Joined IIT Jammu for PhD)
- Yogesh Kumari [Co-advised with Dr. Aditya Kanade, IISc., Bangalore]
- Rohit Mehra [Collaborated with Dr. Vinayak Naik, IIITD, Delhi] (First job at Accenture Research Labs)
- Sangeeth K. [Co-advised with Dr. Geoffrey Nelissen and Dr. David Pereira, University of Porto, Portugal] (Completed PhD from Eindhoven University)
- Kapish Malik [Collaborated with Dr. Vinayak Naik, IIITD, Delhi] (First Job at Accenture Research Labs)
- Khushbu Yadav (First job at IBM)
- Anjali Singh (First job Dell Technologies)

#### **B.Tech. Students:**

- Shuktika Jain (Completed MS from UCLA)
- Saumya Jain (First Job at Directi)
- Sonia Dalal (First job at Bloomberg LP)
- Vedanshi Kataria (Completed MS from Waterloo)
- Garvita Allabadi (First job at Microsoft, Now MS at UIUC)
- Ayush Goel (Joined UMich for PhD)
- Sukrit Kalra (Joined Berkeley for PhD)
- Chaitanya Kumar (First job at IBM Research, Delhi)
- Harkirat Lamba (First job at EMC, Bangalore)
- Peeyush Kushwaha (Intreprenuer)
- Piyush Gupta (First job at Microsoft)
- Fahad Nayar (First job RF at Microsoft Research)
- Krishna Kariya (First job at Microsoft)
- Salil Purandare (Joined Iowa State for PhD)
- Akash Sharma (First job at MathWorks)
- Bhavya Chopra (First job at Microsoft Research)
- Anmol Jindal (First job at Microsoft)
- Harshita Srinivas (First job at D. E. Shaw Group)
- Pritish Gulati (First job at LinkedIn)
- Rahul Sethi (First job at Expedia)
- Aditi Sejal (First job at LinkedIn)
- Reshmi Chatterji (First job at Qualcomm)

#### **Research Assistants:**

- Udit Agarwal (Joined UBC for MS)

#### TEACHING

#### **IIIT-Delhi:**

- CSE503: Program Analysis
- CSE504: Decision Procedures
- CSE584: Program Verification
- CSE304: Practice of Programming
- CSE102: Data Structures and Algorithms

#### **UNL:**

- SOFT260: Software Engineering III (Fall 2022)

- CSCE322: Programming Language Concepts (Spring 2023)
- CSCE428/828: Automata, Computation, and Formal Languages (Fall 2023)

- RESEARCH  
FUNDING SUPPORT
- Two of my students received two prestigious Prime Minister's PhD Fellowships in association with Microsoft Research and one in association with Nucleus Software. The fellowship fully supports the students for 4 years.
  - Two of my PhD students received two prestigious TCS PhD Fellowships. The fellowship fully supports the students for 4 years.
  - Received funding from Infosys Centre for Artificial Intelligence at IIITD worth Rs. 1,10,000/- to pursue binary analysis research.

- HONORS AND  
AWARDS
- Received Research Recognition Award at University of Nebraska–Lincoln, 2022.
  - Received Teaching Excellence award given by the graduating B.Tech. and M.Tech. students of IIIT-D, 2016
  - Received Teaching Recognition letters from IIIT-D for my courses on program analysis, and data structures and algorithms in 2015, 2016, 2017, 2018, 2019, 2020, and 2021 based on the student feedback.
  - Received ACM Distinguished Paper award at ISSTA 2013.
  - Received the Best Paper award at RV 2018.
  - Received the Distinguished Reviewer award at MSR'21.

- INVITED TALKS
- Application of Program Analysis and Deep Learning to Program Comprehension, Invited as guest speaker for a course jointly offered by IIIT-Hyderabad and IIIT-Delhi for students and industry professionals, October 2021.
  - Static analysis for Software Dependability and Developer Productivity, Nucleus Software, Invited as the main speaker for the annual tech event, January 2019.
  - Ensuring Program Dependability, Invited as the guest speaker at Tata Research Development and Design Centre, Pune, December 2018.
  - Interprocedural Program Analysis, Invited as the guest speaker at the Govt. College of Engineering, Idukki, Kerala, December 2017.
  - Static analysis for Software Quality and Developer Productivity, Invited as the guest speaker at Ashoka University, October 2017.
  - Security Vulnerabilities, Invited as the guest speaker in a workshop organized by SAG-DRDO, Delhi, November 2016.
  - Automatic Program Repair, Invited as the guest speaker by IISc, Bangalore, September 2016.
  - Static Analysis for Secure Software Development, Invited as the guest speaker in a workshop organized by CAIR-DRDO, Bangalore, November 2014.
  - Dynamic Program analysis for Security Assurances, Invited as the guest speaker at Security and Privacy Symposium, IIT-Kanpur, Kanpur, February 2014.

- AFFILIATIONS
- Principle Investigator of the Program Analysis Group (PAG) at IIITD.
  - Founding Member of Cybersecurity Education and Research Centre (CERC) at IIITD.
  - Founding Member of Center for Artificial Intelligence (CAI) at IIITD.
  - Founding Member of the research group TReWiS (Technological Research in Wildlife Studies) at IIITD that works in collaboration with Wildlife Institute of India (WII).
  - Member of ACM and IEEE.

SKILLS **Computer Programming:**



- Java, C, C++, Prolog, Javascript, Perl, AWK, UNIX shell scripting, GNU make, SQL.

**Static Program Analysis and Verification Tools:**

- Soot, Clang, LLVM, Dafny, KLEE.

**Dynamic Program Analysis Tools:**

- JavaMOP, Tracematches, AspectJ.

**Version Control and Software Configuration Management:**

- Git, CVS, SVN, Microsoft Visual SourceSafe, Continuous, RCS.

**Databases:**

- Oracle, Postgres.

**Operating Systems:**

- Linux, Solaris, Microsoft Windows family, Mac OS X.