Shin Yoo

Associate Professor
School of Computing
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Education and Employment

Associate Professor, School of Computing, KAIST, Republic of Korea, March 2018 - Current
Leading Computational Intelligence for Software Engineering (COINSE) Lab at KAIST.

Assistant Professor, School of Computing, KAIST, Republic of Korea, August 2015 - February 2018
Founded Computational Intelligence for Software Engineering (COINSE) Lab at KAIST.

Lecturer, Department of Computer Science, University College London, UK, October 2012 - July 2015
Worked on theoretical proof of the performance of GP-evolved fault localisation techniques. Developed a dynamic slicing tool and applied it as a novel slicing technique for visual programming languages.

Research Associate, Department of Computer Science, University College London, UK, August 2010 - September 2012
Developed theory and techniques to optimise fault localisation using information theory. Developed a General Purpose computation on Graphics Processing Unit (GPGPU) computation framework for regression test suite minimisation and applied to a case study from IBM.

Research Associate, Department of Computer Science, King's College London, UK, October 2009 - July 2010
Developed an open-source multi-objective test suite minimisation tool and applied to Google's testing framework. Performed a large scale survey of regression testing technique literature. Developed a metamorphic testing method for stochastic optimisation algorithms.

Ph.D., Computer Science, King's College London, UK, October 2006 - September 2009
Dissertation: Extending the Boundaries in Regression Testing: Complexity, Latency, and Expertise
Supervisor: Mark Harman

MSc., Software Engineering with Distinction, King's College London, UK, September 2005 - September 2006

Technical Sales Consultant, Oracle Korea, October 2004 - April 2005
Developed a monitoring/debugging tool for web application servers. Provided technical consultancy for enterprise markets.

Software Engineer, Xinics Inc., January 2000 - February 2004
Developed a content authoring tool for an e-Learning suite.

BSc., Computer Science, Seoul National University, Republic of Korea, 1996 - 2000

Publications

Statistics based on Google Scholar[1]

- Accumulated Citations: 4,729

- h-index: 30

Peer-Reviewed Journal Articles

- Paul Ralph, Sebastian Baltes, Gianisa Adisaputri, Richard Torkar, Vladimir Kovalenko, Marcos Kalinowski, Nicole Novielli, Shin Yoo, Xavier Devroey, Xin Tan, Minghui Zhou, Burak Turhan, Rashina Hoda, Hideaki Hata, Gregorio Robles, Amin Milani Fard, and Ran Alkadhi. Pandemic programming. *Empirical Software Engineering*, 25(6):4927–4961, 2020

- Seongmin Lee, David Binkley, Nicolas Gold, Syed Islam, Jens Krinke, and Shin Yoo. Evaluating lexical approximation of program dependence. *Journal of Systems and Software*, 160:110459, 2020

- Jeongju Sohn and Shin Yoo. Empirical evaluation of fault localisation using code and change metrics. *IEEE Transactions on Software Engineering*, pages 1–1, 2019

- Yunho Kim, Seokhyeon Mun, Shin Yoo, and Moonzoo Kim. Precise learn-to-rank fault localization using dynamic and static features of target programs. *ACM Trans. Softw. Eng. Methodol.*, 28(4):23:1–23:34, October 2019

- David Binkley, Nicolas Gold, Syed Islam, Jens Krinke, and Shin Yoo. A comparison of tree- and line-oriented observational slicing. *Empirical Software Engineering*, Jan 2019

- Donghwan Shin, Shin Yoo, and Doo-Hwan Bae. A theoretical and empirical study of diversity-aware mutation adequacy criterion. *IEEE Transactions on Software Engineering*, 44(10):914–931, 2018

- K. Liu, D. Kim, T. F. Bissyande, S. Yoo, and Y. Le Traon. Mining fix patterns for findbugs violations. *IEEE Transactions on Software Engineering, to appear*, 2018

- Shin Yoo, Xiaoyuan Xie, Fei-Ching Kuo, Tsong Yueh Chen, and Mark Harman. Human competitiveness of genetic programming in sbfl: Theoretical and empirical analysis. *ACM Transactions on Software Engineering and Methodology*, 26(1):4:1–4:30, July 2017

- Shin Yoo, David Binkley, and Roger Eastman. Observational slicing based on visual semantics. *Journal of Systems and Software*, 129:60–78, July 2017

- Justyna Petke, Myra B. Cohen, Mark Harman, and Shin Yoo. Practical combinatorial interaction testing: Empirical findings on efficiency and early fault detection. *IEEE Transactions on Software Engineering*, 41(9):901–924, September 2015

- Earl Barr, Mark Harman, Phil McMinn, Muzammil Shahbaz, and Shin Yoo. The oracle problem in software testing: A survey. *IEEE Transactions on Software Engineering*, 41(5):507–525, May 2015

- Mark Harman, Jens Krinke, Inmaculada Medina-Bulo, Francisco Palomo-Lozano, Jian Ren, and Shin Yoo. Exact scalable sensitivity analysis for the next release problem. *ACM Transactions on Software Engineering and Methodology*, 23(2):19:1–19:31, 2014

- Mark Harman, Kiran Lakhotia, Jeremy Singer, David R. White, and Shin Yoo. Cloud engineering is search based software engineering too. *Journal of Systems and Software*, 86(9):2225 – 2241, 2013

- Shin Yoo, Mark Harman, and Shmuel Ur. GPGPU test suite minimisation: Search based software engineering performance improvement using graphics cards. *Empirical Software Engineering*, 18(3):550–593, 2013

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[1]Citation statistics correct as of 3 November 2020.

- Shin Yoo, Mark Harman, and David Clark. Fault localization prioritization: Comparing information-theoretic and coverage-based approaches. *ACM Transactions on Software Engineering Methodology*, 22(3):19:1–19:29, July 2013

- Shin Yoo and Mark Harman. Test data regeneration: Generating new test data from existing test data. *Journal of Software Testing, Verification and Reliability*, 22(3):171–201, 2012

- Shin Yoo and Mark Harman. Regression testing minimisation, selection and prioritisation: A survey. *Software Testing, Verification, and Reliability*, 22(2):67–120, March 2012

- Shin Yoo and Mark Harman. Using hybrid algorithm for pareto effcient multi-objective test suite minimisation. *Journal of Systems Software*, 83(4):689–701, April 2010

Peer-Reviewed Conference and Workshop Papers

- Jinhan Kim, Jeongil Ju, Robert Feldt, and Shin Yoo. Reducing dnn labelling cost using surprise adequacy: An industrial case study for autonomous driving. In *Proceedings of ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE Industry Track)*, ESEC/FSE 2020, 2020

- Sungmin Kang, Robert Feldt, and Shin Yoo. Sinvad: Search-based image space navigation for dnn image classifier test input generation. In *Proceedings of the International Workshop on Search Based Software Testing (SBST 2020)*, 2020

- Seah Kim and Shin Yoo. Evaluating surprise adequacy for question answering. In *Proceedings of The 2nd International Workshop on Testing for Deep Learning and Deep Learning for Testing (DeepTest 2020)*, 2020

- S. Lee, S. Hong, J. Yi, T. Kim, C. Kim, and S. Yoo. Classifying false positive static checker alarms in continuous integration using convolutional neural networks. In *2019 12th IEEE Conference on Software Testing, Validation and Verification (ICST)*, pages 391–401, April 2019

- Gabin An, Aymeric Blot, Justyna Petke, and Shin Yoo. Pyggi 2.0: Language independent genetic improvement framework. In *Proceedings of the 2019 27th ACM Joint Meeting on European Software Engineering Conference and Symposium on the Foundations of Software Engineering*, ESEC/FSE 2019, pages 1100–1104, New York, NY, USA, 2019. ACM

- Seongmin Lee, David Binkley, Robert Feldt, Nicolas Gold, and Shin Yoo. MOAD: Modeling observation-based approximate dependency. In *19th IEEE International Working Conference on Source Code Analysis and Manipulation*, SCAM 2019, 2019

- Jeongju Sohn and Shin Yoo. Why train-and-select when you can use them all? Ensemble model for fault localisation. In *Proceedings of the Annual Conference on Genetic and Evolutionary Computation*, GECCO 2019, pages 1408–1416, 2019

- Jinhan Kim, Robert Feldt, and Shin Yoo. Guiding deep learning system testing using surprise adequacy. In *Proceedings of the 41th International Conference on Software Engineering*, ICSE 2019, pages 1039–1049. IEEE Press, 2019

- Mike Papadakis, Donghwan Shin, Shin Yoo, and Doo-Hwan Bae. Are mutation scores correlated with real fault detection? a large scale empirical study on the relationship between mutants and real faults. In *Proceedings of the 40th International Conference on Software Engineering*, ICSE 2018, pages 537–548, 2018

- Kabdo Choi, Jeongju Sohn, and Shin Yoo. Learning fault localisation for both humans and machines using Multi-Objective GP. In *Proceedings of the 10th International Symposium on Search Based Software Engineering*, SSBSE 2018, pages 349–355, 2018

- Junhwi Kim, Minhyuk Kwon, and Shin Yoo. Generating test input with deep reinforcement learning. In *Proceedings of International Workshop on Search Based Software Testing*, SBST 2018, pages 51–58, 2018

- Gabin An, Jinhan Kim, and Shin Yoo. Comparing line and ast granularity level for program repair using pyggi. In *Proceedings of the 4th Genetic Improvement Workshop*, GI@ICSE 2018, pages 19–26, 2018

- Byeonghyeon You, Junhwi Kim, Minhyuk Kwon, Phil McMinn, and Shin Yoo. C 언어 테스트 입력 생성에 대한 CAVM, Austin, CodeScroll의 비교 및 분석. In *Proceedings of the 20th Korea Conference on Software Engineering*, number 1 in KCSE 2018, pages 14–22, 2018

- Gabin An, Jinhan Kim, Seongmin Lee, and Shin Yoo. PyGGI: Python General framework for Genetic Improvement. In *Proceedings of Korea Software Congress*, KSC 2017, 2017

- Dave Binkley, Nicolas Gold, Syed Islam, Jens Krinke, and Shin Yoo. Tree-oriented vs. line-oriented observation-based slicing. In *2017 IEEE 17th International Working Conference on Source Code Analysis and Manipulation (SCAM)*, pages 21–30, Sept 2017

- Jinhan Kim, Junhwi Kim, and Shin Yoo. Ggpgpgpu: Evaluation of parallelisation of genetic programming using gpgpu. In *International Symposium on Search-Based Software Engineering*, SSBSE 2017, pages 137–142. Springer, 2017

- Junhwi Kim, Byeonghyeon You, Minhyuk Kwon, Phil McMinn, and Shin Yoo. Evaluating CAVM: a new search based test data generation tool for C. In *Proceedings of the International Symposium on Search Based Software Engineering*, SSBSE 2017, pages 143–149. Springer, 2017

- Nicolas Gold, David Binkley, Mark Harman, Syed Islam, Jens Krinke, and Shin Yoo. Generalized observational slicing for tree-represented modelling languages. In *Proceedings of the 11th Joint Meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering*, ESEC/FSE 2017, pages 547–558, 2017

- Shin Yoo. Embedding Genetic Improvement into programming languages. In *Proceedings of the Genetic and Evolutionary Computation Conference Companion*, GECCO '17, pages 1551–1552, New York, NY, USA, 2017. ACM

- Dahyun Kang, Jeongju Sohn, and Shin Yoo. Empirical evaluation of conditional operators in GP based fault localization. In *Genetic and Evolutionary Computation*, GECCO 2017, pages 1295–1302, 2017

- Seongmin Lee and Shin Yoo. Hyperheuristic observation based slicing of guava. In *International Symposium on Search-Based Software Engineering*, SSBSE 2017, pages 175–180, 2017

- Jeongju Sohn and Shin Yoo. Fluccs: Using code and change metrics to improve fault localisation. In *Proceedings of the International Symposium on Software Testing and Analysis*, ISSTA 2017, pages 273–283, 2017

- Donghwan Shin, Shin Yoo, and Doo-Hwan Bae. Diversity-aware mutation adequacy criterion for improving fault detection capability. In *Ninth IEEE International Conference on Software Testing, Verification and Validation Workshops*, ICSTW 2016, pages 122–131, April 2016

- Junhwi Kim, Seunguk Oh, Byeonghyeon You, and Shin Yoo. Information theoretic diversity aware evolutionary unit test generation. In *Proceedings of the Korea Information Science Society Annual Winter Conference*, pages 389–391, 2016

- Robert Feldt, Simon Poulding, David Clark, and Shin Yoo. Test set diameter: Quantifying the diversity of sets of test cases. In *Proceedings of the IEEE International Conference on Software Testing, Verification, and Validation*, ICST 2016, pages 223–233, 2016

- Jeongju Sohn, Seongmin Lee, and Shin Yoo. Amortised deep parameter optimisation of gpgpu work group size for opencv. In Federica Sarro and Kalyanmoy Deb, editors, *Proceedings of the 8th International Symposium on Search Based Software Engineering*, volume 9962 of *Lecture Notes in Computer Science*, pages 211–217. Springer International Publishing, 2016

- Jinsuk Lim and Shin Yoo. Field report: Applying monte carlo tree search for program synthesis. In *Search-Based Software Engineering*, Lecture Notes in Computer Science, pages 304–310. Springer International Publishing, 2016

- Shin Yoo. Amortised optimisation of non-functional properties in production environments. In Márcio Barros and Yvan Labiche, editors, *Search-Based Software Engineering*, volume 9275 of *Lecture Notes in Computer Science*, pages 31–46. Springer International Publishing, 2015

- Michael G. Epitropakis, Shin Yoo, Mark Harman, and Edmund K. Burke. Empirical evaluation of pareto efficient multi-objective regression test case prioritisation. In *Proceedings of the 2015 International Symposium on Software Testing and Analysis*, ISSTA 2015, pages 234–245, New York, NY, USA, 2015. ACM

- David Clark, Robert Feldt, Simon Poulding, and Shin Yoo. Information transformation: An underpinning theory for software engineering. In *Proceedings of the 37th International Conference on Software Engineering - Volume 2*, ICSE 2015, pages 599–602, Piscataway, NJ, USA, 2015. IEEE Press

- David Binkley, Nicolas Gold, Mark Harman, Syed Islam, Jens Krinke, and Shin Yoo. ORBS and the limits of static slicing. In *Proceedings of the 15th IEEE International Working Conference on Source Code Analysis and Manipulation*, SCAM 2015, pages 1–10, September 2015

- David R. White, Shin Yoo, and Jeremy Singer. The programming game: Evaluating mcts as an alternative to gp for symbolic regression. In *Proceedings of the Companion Publication of the 2015 on Genetic and Evolutionary Computation Conference*, GECCO Companion '15, pages 1521–1522, New York, NY, USA, 2015. ACM

- Seokhyeon Moon, Yunho Kim, Moonzoo Kim, and Shin Yoo. Ask the mutants: Mutating faulty programs for fault localization. In *Proceedings of the 7th International Conference on Software Testing, Verification and Validation*, ICST 2014, pages 153–162, 2014

- David Binkley, Nicolas Gold, M. Harman, Syed Islam, Jens Krinke, and Shin Yoo. ORBS: Language-independent program slicing. In *Proceedings of the 22nd ACM SIGSOFT International Symposium on the Foundations of Software Engineering*, FSE 2014, pages 109–120, 2014

- Shin Yoo, David Binkley, and Roger Eastman. Seeing is slicing: Observation based slicing of picture description languages. In *Proceedings of the 14th IEEE International Working Conference on Source Code Analysis and Manipulation*, SCAM 2014, pages 175–184, 2014

- Justyna Petke, Myra Cohen, Mark Harman, and Shin Yoo. Efficiency and early fault detection with lower and higher strength combinatorial interaction testing. In *Proceedings of the 9th joint meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering*, ESEC/FSE 2013, pages 26–36, 2013

- Xiaoyuan Xie, Fei-Ching Kuo, Tsong Yueh Chen, Shin Yoo, and Mark Harman. Provably optimal and human-competitive results in sbse for spectrum based fault localisation. In Günther Ruhe and Yuanyuan Zhang, editors, *Search Based Software Engineering*, volume 8084 of *Lecture Notes in Computer Science*, pages 224–238. Springer Berlin Heidelberg, 2013

- Shin Yoo. Evolving human competitive spectra-based fault localisation techniques. In Gordon Fraser and Jerffeson Teixeira de Souza, editors, *Search Based Software Engineering*, volume 7515 of *Lecture Notes in Computer Science*, pages 244–258. Springer Berlin Heidelberg, 2012

- Shin Yoo, Robert Nilsson, and Mark Harman. Faster fault finding at Google using multi objective regression test optimisation. In 8th *European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering (ESEC/FSE '11)*, ESEC/FSE 2011, Szeged, Hungary, September 5th - 9th 2011. Industry Track

- Shin Yoo, Mark Harman, and Shmuel Ur. Highly scalable multi-objective test suite minimisation using graphics card. In *Proceedings of the 3rd International Symposium on Search-Based Software Engineering*, volume 6956 of *SSBSE 2011*, pages 219–236, September 2011

- Jungsup Oh, Mark Harman, and Shin Yoo. Transition coverage testing for Simulink/Stateflow models using messy genetic algorithms. In *Proceedings of the 13th annual conference on Genetic and evolutionary computation*, GECCO 2011, pages 1851–1858, New York, NY, USA, 2011. ACM

- M. Harman, Sung Gon Kim, K. Lakhotia, P. McMinn, and Shin Yoo. Optimizing for the number of tests generated in search based test data generation with an application to the oracle cost problem. In *Proceedings of the 3rd International Workshop on Search-Based Software Testing*, SBST 2010, pages 182 –191, apr. 2010

- Shin Yoo. A novel mask-coding representation for set cover problems with applications in test suite minimisation. In *Proceedings of the 2nd International Symposium on Search-Based Software Engineering*, SSBSE 2010, pages 19–28, 2010

- Shin Yoo. Metamorphic testing of stochastic optimisation. In *Proceedings of the 3rd International Workshop on Search-Based Software Testing*, SBST 2010, pages 192–201, 2010

- Shin Yoo, Mark Harman, Paolo Tonella, and Angelo Susi. Clustering test cases to achieve effective & scalable prioritisation incorporating expert knowledge. In *Proceedings of International Symposium on Software Testing and Analysis*, ISSTA 2009, pages 201–211. ACM Press, July 2009

- Shin Yoo, Mark Harman, and Shmuel Ur. Measuring and improving latency to avoid test suite wear out. In *Proceedings of the International Conference on Software Testing, Verification and Validation Workshop*, ICSTW 2009, pages 101–110. IEEE Computer Society Press, April 2009

- Mark Harman, Jens Krinke, Jian Ren, and Shin Yoo. Search based data sensitivity analysis applied to requirement engineering. In *Proceedings of the 11th Annual Conference on Genetic and Evolutionary Computation*, GECCO 2009, pages 1681–1688, Montreal, Canada, 8-12 July 2009. ACM

- Shin Yoo and Mark Harman. Pareto efficient multi-objective test case selection. In *Proceedings of International Symposium on Software Testing and Analysis*, ISSTA 2007, pages 140–150. ACM Press, July 2007

Book Chapter

- Mark Harman, Phil McMinn, Jerffeson Teixeira de Souza, and Shin Yoo. *Empirical Software Engineering and Verification*, volume 7007 of *Lecture Notes in Computer Science*, chapter Search Based Software Engineering: Techniques, Taxonomy, Tutorial. Springer–Verlag, 2012

Book

- Shin Yoo. 인공지능은 뇌를 닮아 가는가 *(Do AIs resemble human brain?)*. Culturelook, 2014

Fast Abstracts and Posters

- Shin Yoo. SBSE As Gaming. In *Proceedings of the 3rd International Symposium on Search-Based Software Engineering*, SSBSE 2011, 2011

- *Controlled Redundancy: Avoiding Test Suite Wear-Out*
  Shin Yoo, Mark Harman and Shmuel Ur
  ACM International Symposium on Software Testing and Analysis, July 2008

Invited Talks

- *Testing in the Age of Deep Neural Networks*
  Technical Seminar, Samsung Research, December 2019

- *Breaking Things to Learn about Dependency*
  Technical Seminar, Facebook UK, October 2019

- *The Role of SBSE in the Age of Deep Neural Networks*
  The 61th CREST Open Workshop, University College London, October 2019

- *Automated Programming via Evolutionary Computation: Are we there yet?*
  Kavli Frontiers of Science, National Academy of Science, June 2019

- **Invited Keynote**: *Testing of AI Systems - Challenges Ahead*
  The 1st International Workshop on Machine Learning and Software Testing, April 2019

- **Invited Keynote**: *SBST in the age of AI Systems - Challenges Ahead*
  The 12th International Workshop on Search Based Software Testing, May 2019

- *Hammer and Nails in Genetic Improvement*
  The 58th CREST Open Workshop, University College London, UK, Febryart 2018

- *Learning How to Localise Faults Automatically*
  University of Sheffield, February 2018

- *Search-Based Software Engineering: Tutorial*
  Shonan Meeting - "Data-Driven Search-Based Software Engineering", December 2019

- *Learning How to Localise Faults Automatically*
  Technical Seminar, Software Centre, Samsung Electronics, November 2017

- *Amortised Optimisation as a Means to Achieve Genetic Improvement*
  The 50th CREST Open Workshop, University College London, UK, January 2017

- *AI, or what does it mean to fly?*

  – 과학교사 모임 가꿈, 2016
  – Kookmin University (a special lecture for "ICT and Creative Thinking"), 2016, 2017
  – Colloquium, Korean Association for Posthuman Society, 2016
  – Go-Venture Forum, 2016
  – Art Space Nabi / Singularity 99, 2016

- *Introduction to Search Based Software Engineering*

  – Colloquium, Department of Industrial and Systems Engineering, KAIST, 2016
  – Suresoft Technology, 2016
  – Colloquium, Software Engineering Programme, KAIST, 2016
  – Naver Labs, 2016
  – Korean Conference on Software Engineering, 2015
  – LG SDET Programme Graduation Seminar, 2015

- *Materials for Software*

  – Colloquium, School of Computing, KAIST, 2015

- *ORBS: Observation Based Program Slicing and Beyond*

  – Kyungbook University, 2015
  – Chunnam University, 2014

- *Spectrum Based Fault Localisation: Entropy and Evolution*

  – Hong Kong University of Science and Technology, 2013
  – University of Luxembourg, 2013

- *TAO: Turing test As Objective function*

  – The 2nd International Workshop on Realizing Artificial Intelligence Synergies in Software Engineering, 2013 **Best Paper Award**

- *Regression Testing: Past, Present & Future*

  - Training and Research on Testing (TAROT) Summer School, St. Petersburg, Russia, June 2011.

- *Search Based Regression Testing: A Story of Rapid Prototyping*

  - Google EMEA (Europe, Middle East & Africa) Faculty Summit, Zurich, Switzerland, May 2011.

- *Early Test Feedback by Test Prioritisation*

  - Google Test Automation Conference, Hyderabad, India, October 2010.

Community Services and Recognition

Conference Organisation

- **Workshop Co-chair**: The 8th International Workshop on Genetic Improvement, 2020
- **Workshop Co-chair**: The 8th International Workshop on Realizing Artificial Intelligence Synergies in Software Engineering, 2020
- **Program Co-chair**: The 42th International Conference on Software Engineering, New Ideas and Emerging Results Track, 2020
- **Program Co-chair**: The 11th International Conference on Softweare Testing, Verification, and Validation, 2018
- **Program Co-chair**: The 6th International Symposium on Search Based Software Engineering, 2014
- **General Chair**: The 2nd International Workshop on Regression Testing, 2012
- **Track Chair**: Genetic and Evolutionary Computation Conference, SBSE Track, 2012
- **Program Chair**: The 1st International Workshop on Regression Testing, 2011
- **Graduate Student Chair**: The 4th International Symposium on Search Based Software Engineering, 2012

Program Committee Membership

- 2021: ICSE (New Ideas and Emerging Results Track), FSE
- 2020: ICSE, FSE, SBST, ASE, AST
- 2019: ICSE (New Ideas and Emerging Results Track), ASE, ICSME, SANER, KCSE (Short Papers), MSR, RAISE, Mutation
- 2018: ICSE, FSE (New Ideas and Emerging Results Track), SSBSE, RAISE
- 2017: ICST, SSBSE, APSEC (Doctoral Symposium), ICSE (Poster Track)
- 2016: ICST, SSBSE, ISSRE (Fast Abstract Track)
- 2015: ICSE (Review Board), SBST, NASBSE, ICST (Tool Track), SSBSE (Graduate Student Track)
- 2014: ISSTA (Doctoral Symposium), SBST, CMSEBA
- 2013: ISSTA, SBST, CMSBSE, Regression
- 2012: SSBSE, KCSE, SBST, GECCO (SBSE Track)
- 2011: SSBSE
- 2010: SSBSE, SBST
- 2009: SSBSE

Steering Committee

- International Conference on Software Testing, Verification, and Validation (ICST): 2017 - (Serving as the SC chair)
- International Symposium on Search Based Software Engineering (SSBSE): 2015-

Editorial Board Membership

- ACM Transactions on Software Engineering and Methodology, 2019-
- Journal of Empirical Software Engineering, 2018-
- IET Software Journal, 2017-

Special Issue Editor

- Special Issue of ICST 2018, Journal of Software Testing, Verification and Reliability
- Special Issue of SSBSE 2014, Journal of Empirical Software Engineering
- Special Issue on Regression Testing, Software Quality Journal

Awards and Recognition

- Technical Innovation Award, College of Engineering, KAIST, 2019
- Distinguished Reviewer, International Conference on Software Engineering, 2018
- ACM SIGEVO HUMIES - Human Competitiveness Award, Silver Medal, 2017
- Best Paper Award, IEEE Working Conference on Source Code Analysis and Manipulation, 2017
- Distinguished Reviewer, ACM Transactions on Software Engineering and Methodology, 2015-2016
- Distinguished Reviewer, ACM Transactions on Software Engineering and Methodology, 2013-2014
- Best Paper Award, International Workshop on Realizing Artificial Intelligence Synergy in Software Engineering, 2013
- Distinguished Reviewer, ACM Transactions on Software Engineering and Methodology, 2011-2012
- Best Paper Award, International Symposium on Search Based Software Engineering, 2011
- Best Paper Award, International Workshop on Search Based Software Testing, 2008
- Overseas Research Student Grant Award, Higher Education Funding Council for England, 2007
- Best MSc Project Award, King's College London, 2006

Teaching Experience

Subject	Level	Class Size	Institution	Feedback	Years
CS489 Computer Ethics and Social Issues	BSc/MSc	50	KAIST	4.35	2019 Fall
CS454 AI-based Software Engineering	BSc/MSc	62	KAIST	4.34	2019 Fall
CS492 Introduction to Research[2]	BSc/MSc	25	KAIST	4.69	2019 Spring
CS453 Automated Software Testing	BSc/MSc	32	KAIST	4.24	2019 Spring
CS492 Introduction to Research[2]	BSc/MSc	29	KAIST	4.65	2018 Fall
CS454 AI-based Software Engineering	BSc/MSc	50	KAIST	4.24	2018 Fall
CS453 Automated Software Testing	BSc/MSc	26	KAIST	4.37	2018 Spring
CS402 Introduction to Logic in Computer Science	BSc/MSc	55	KAIST	4.07	2018 Spring
CS454 AI-based Software Engineering	BSc/MSc	34	KAIST	4.33	2017 Fall
CS402 Introduction to Logic in Computer Science	BSc/MSc	38	KAIST	4.07	2017 Spring
CS101 Introduction to Programming	BSc	40	KAIST	4.31	2017 Spring
CS492 Search Based Software Engineering	BSc/MSc	23	KAIST	4,37	2016 Fall
CS402 Introduction to Logic in Computer Science	BSc/MSc	70	KAIST	3.90	2016 Spring
CS492 Search Based Software Engineering	BSc/MSc	10	KAIST	4.78	2015 Fall
COMPGC03 Architecture and Hardware	MSc	$\simeq 40$	UCL	-	2013 - 2015
COMP2010 Compiler	BSc	$\simeq 50$	UCL	-	2013 - 2015
COMPGS03 Validation & Verification	MSc	$\simeq 30$	UCL	-	2011 - 2015

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[2]Co-taught with Prof. Sungju Lee and Prof. Juho Kim, School of Computing, KAIST (`http://intro2research.org`).

References

- **Prof. Lionel Briand** Faculté des Sciences, de la Technologie et de la Communication
  University of Luxembourg
  4, rue Alphonse Weicker, L-2721 Luxembourg
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- **Prof. Xin Yao** Natural Computation Group, School of Computer Science
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