Gabin An

🔬 Assistant Professor, Department of Computer Science and Engineering, Korea University
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🎓 Google Scholar: https://scholar.google.com/citations?user=T-58s1oAAAAJ
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🌐 Lab Website: https://ku-selene.github.io/
🕐 Last updated on Nov 20, 2025

Employment History

September 2025 –	🔖 **Assistant Professor, Korea University**
	○ Dept. of Computer Science and Engineering
	○ Location: Seoul, Republic of Korea
June 2024 – July 2025	🔖 **Software Engineer in Test, Roku**
	○ Design, develop and maintain automation frameworks and tools
	○ Location: Seoul, Republic of Korea

Education

Mar 2020 – Aug 2024	🔖 **Ph.D., Computer Science, KAIST**, Republic of Korea
	○ Advisor: Prof. Shin Yoo
	○ Thesis: *Synergizing Fault Localization and Continuous Integration to Streamline Bug Resolution in Large-Scale Software Systems* (Distinguished Dissertation Award)
	○ GPA: 4.11/4.3
Mar 2018 – Feb 2020	🔖 **MSc, Computer Science, KAIST**, Republic of Korea
	○ Advisor: Prof. Shin Yoo
	○ Thesis: *Localising Software Faults by Learning Patterns of Failing Executions*
	○ GPA: 4.15/4.3
Feb 2012 – Feb 2018	🔖 **BSc, Computer Science, KAIST**, Republic of Korea
	○ Major GPA: 4.06/4.3
	○ Minor: Business and Technology Management
	○ Honor: Summa Cum Laude
Mar 2016 — Aug 2016	🔖 **Exchange Student, Informatik, TUM**, Germany

Selected Publications

* indicates equal contributions

[1]   S. Kang, S. Yun, J. Hong, S. Yoo, and **G. An**, "Finding the needle in the crash stack: Industrial-scale crash root cause localization with autocrashfl," *arXiv preprint arXiv:2510.22530*, Oct. 2025.

[2]   H. Cho, S. Kang, **G. An**, and S. Yoo, "COSMosFL: Ensemble of Small Language Models for Fault Localisation," in *2th International Workshop on Large Language Models for Code (LLM4Code@ICSE'25)*, May 2025, to appear.

[3]   N. Kim, S. Kang, **G. An**, and S. Yoo, "Lachesis: Predicting LLM Inference Accuracy using Structural Properties of Reasoning Paths," in *6th International Workshop on Deep Learning for Testing and Testing for Deep Learning (DeepTest@ICSE'25)*, May 2025, to appear.

[4]   H. Lee, **G. An**, and S. Yoo, "METAMON: Finding Inconsistencies between Program Documentation and Behavior using Metamorphic LLM Queries," in *2th International Workshop on Large Language Models for Code (LLM4Code@ICSE'25)*, May 2025, to appear.

[5]   J. Son, **G. An**, J. Hong, and S. Yoo, "Evaluating Machine Learning-Based Test Case Prioritization in the Real World: An Experiment with SAP HANA," in *18th IEEE International Conference on Software Testing, Verification and Validation (ICST'25)*, Mar. 2025, to appear.

[6] **G. An**, J. Yoon, T. Bach, J. Hong, and S. Yoo, "Just-in-Time Flaky Test Detection via Abstracted Failure Symptom Matching," in *Proceedings of the 40th International Conference on Software Maintenance and Evolution (ICSME'24)*, Oct. 2024, Industry Track.

[7] J. Choi, **G. An**, and S. Yoo, "Iterative Refactoring of Real-World Open-Source Programs with Large Language Models," in *16th International Symposium on Search-Based Software Engineering (SSBSE'24)*, Jul. 2024, Challenge Track.

[8] S. Kang *, **G. An** *, and S. Yoo, "A Quantitative and Qualitative Evaluation of LLM-based Explainable Fault Localization," in *Proceedings of the ACM on Software Engineering and Volume 1, Number FSE (FSE'24)*, Jul. 2024, Research Track.

[9] **G. An**, M. Kwon, K. Choi, J. Yi, and S. Yoo, "BUGSC++: A Highly Usable Real World Defect Benchmark for C/C++," in *Proceedings of the 38th IEEE/ACM International Conference on Automated Software Engineering (ASE'23)*, Sep. 2023, Tool Demos.

[10] J. Kim, **G. An**, R. Feldt, and S. Yoo, "Learning Test-Mutant Relationship for Accurate Fault Localisation," in *Information and Software Technology*, Jun. 2023.

[11] **G. An**, J. Hong, N. Kim, and S. Yoo, "Fonte: Finding Bug Inducing Commits from Failures," in *Proceedings of the 45th IEEE/ACM International Conference on Software Engineering (ICSE'23)*, May 2023, Technical Track.

[12] **G. An** and S. Yoo, "FDG: A Precise Measurement of Fault Diagnosability Gain of Test Cases," in *Proceedings of the 31st ACM SIGSOFT International Symposium on Software Testing and Analysis (ISSTA'22)*, Jul. 2022, Technical Track.

[13] **G. An** *, J. Yoon *, J. Sohn, J. Hong, D. Hwang, and S. Yoo, "Automatically Identifying Shared Root Causes of Test Breakages in SAP HANA," in *Proceedings of the 44th IEEE/ACM International Conference on Software Engineering (ICSE'22)*, May 2022, SEIP Track.

[14] **G. An**, J. Yoon, and S. Yoo, "Searching for Multi-Fault Programs in Defects4J," in *Proceedings of the 13th International Symposium on Search Based Software Engineering (SSBSE'21)*, Oct. 2021, Challenge Track.

[15] J. Kim, **G. An**, R. Feldt, and S. Yoo, "Ahead of Time Mutation Based Fault Localisation using Statistical Inference," in *Proceedings of the 32nd International Symposium on Software Reliability Engineering (ISSRE'21)*, Oct. 2021, Research Track.

[16] **G. An** and S. Yoo, "Reducing the Search Space of Bug Inducing Commits using Failure Coverage," in *Proceedings of the ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE'21)*, Aug. 2021, Ideas, Visions, and Reflections Track.

[17] J. Sohn *, **G. An** *, J. Hong, D. Hwang, and S. Yoo, "Assisting Bug Report Assignment Using Automated Fault Localisation: An Industrial Case Study," in *Proceedings of the 14th IEEE International Conference on Software Testing, Verification and Validation (ICST'21)*, Apr. 2021, Industry Track.

[18] **G. An**, A. Blot, J. Petke, and S. 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'19)*, Aug. 2019, Tool Demos.

[19] **G. An**, J. Kim, and S. Yoo, "Comparing Line and AST Granularity Level for Program Repair using PyGGI," in *Proceedings of the 4th Genetic Improvement Workshop (GI@ICSE'18)*, May 2018.

Awards and Achievements

2025   🔖 **Distinguished Dissertation Award**, School of Computing, KAIST

2024   🔖 The 40th International Conference on Software Maintenance and Evolution (ICSME 2024)
      ○ **Best Industry Paper Award**
      ○ Paper: G. An, J. Yoon, T. Bach, J. Hong, and S. Yoo, "Just-in-Time Flaky Test Detection via Abstracted Failure" Symptom Matching,"

2022   🔖 Korea Software Congress (KSC 2022)
      ○ **Best Paper Award**
      ○ Paper: G. An, M. Kwon, K. Choi, and S. Yoo, "A Collection of Reproducible Bugs in C/C++ Programs"

      🔖 Microsoft Research Asia PhD Fellowship
      ○ **Nomination Award**

Awards and Achievements (continued)

2019 　Korea Conference on Software Engineering (KCSE 2019)
　○ **Best Short Paper Award**
　○ Paper: G. An, S. Yoo, "Search Space Reduction for Automated Program Repair Using Lexical Features"

2018 　CodRep'18: A machine learning competition on source code data
　○ **Rank: 2nd (official track)**
　○ Organised by KTH Royal Institute of Technology, Stockholm, Sweden
　○ Web: `https://github.com/KTH/CodRep-competition`

2017 　Korea Software Congress (KSC 2017)
　○ **Best Presentation Award**
　○ Paper: G. An, J. Kim, S. Lee, and S. Yoo, "PyGGI: Python General framework for Genetic Improvement"

Miscellaneous Experience

Academic Services (PC & OC)

2026 　**Industry Track Co-Chair**, 19th IEEE International Conference on Software Testing, Verification and Validation (ICST 2026)

　Program Committee Member, Industry Track, the ACM International Conference on Foundations of Software Engineering (FSE 2026)

2025 　**Publicity Co-Chair**, the 40th IEEE/ACM International Conference on Automated Software Engineering (ASE 2025)

　Program Committee Member, Tool Demonstration Track, the 32nd Asia-Pacific Software Engineering Conference (APSEC 2025)

　Program Committee Member, Research Track, the 40th IEEE/ACM International Conference on Automated Software Engineering (ASE 2025)

　Program Committee Member, Journal-First Track, the 40th IEEE/ACM International Conference on Automated Software Engineering (ASE 2025)

　Program Committee Member, the 14th Genetic Improvement Workshop @ ICSE 2025

　Program Committee Member, Research Track, the 47th International Conference on Software Engineering (ICSE 2025)

2024 　**Emergency Program Committee Member**, Research Track, the 39th IEEE/ACM International Conference on Automated Software Engineering (ASE 2024)

　Program Co-Chair, RENE/NIER Track, the 16th Symposium on Search Based Software Engineering (SSBSE 2024)

　Organising Committee Member, the 13th Genetic Improvement Workshop @ ICSE 2024

2023 　**Program Committee Member**, RENE/NIER Track, the 15th Symposium on Search Based Software Engineering (SSBSE 2023)

　Program Committee Member, Joint Artifact Evaluation Track and ROSE Festival, the 39th International Conference on Software Maintenance and Evolution (ICSME 2023)

　Organising Committee Member, the 12th Genetic Improvement Workshop @ ICSE 2023

2022 　**Web Chair**, the 14th Symposium on Search Based Software Engineering (SSBSE 2022)

　Program Committee Member, the 11th Genetic Improvement Workshop @ GECCO 2022

　Program Committee Member, Joint Artifact Evaluation Track and ROSE Festival, the 38th International Conference on Software Maintenance and Evolution (ICSME 2022)

2021 　**Program Committee Member**, the 10th Genetic Improvement Workshop @ ICSE 2021

　Program Committee Member, Artifact Evaluation Track, the 37th International Conference on Software Maintenance and Evolution (ICSME 2021)

2020 　**Web Chair**, the 8th Genetic Improvement Workshop @ ICSE 2020

Academic Services (Journal Reviewing)

　ACM Transactions on Software Engineering and Methodology (TOSEM)

　IEEE Transactions on Software Engineering (TSE)

Miscellaneous Experience (continued)

- Journal of Systems and Software (JSS)
- Automated Software Engineering (ASE Journal)

Teaching & Counselling Experience

2025
- Instructor, Algorithms (COSE214), Dept. of Computer Science and Engineering, Korea University, Fall 2025

2023
- TA, Introduction to Software Engineering (CS350), School of Computing, KAIST, Spring 2023

2021
- TA, Computer Ethics and Social Issues (CS489), School of Computing, KAIST, Fall 2021
- TA, Operating Systems and Lab (CS330), School of Computing, KAIST, Spring 2021

2020
- TA, Computer Ethics and Social Issues (CS489), School of Computing, KAIST, Fall 2020
- TA, Automated Software Testing (CS453), School of Computing, KAIST, Spring 2020

2019
- Head CA (Academic Counseling Assistant), School of Computing, KAIST, Spring 2019

2018
- CA (Academic Counseling Assistant), School of Computing, KAIST, Fall 2018
- TA, Programming Practice (CS109), KAIST, Spring 2018

2017
- Undergraduate TA, Programming Practice (CS109), KAIST, Spring 2017

References

Available on Request