



Minseok Jeon 전민석

Assistant Professor · Principal Investigator, PLX Lab

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RESEARCH INTERESTS

I develop programming language techniques for addressing challenges across computer science, in particular software engineering and machine learning. My approach is to design domain-specific languages (DSLs) that express solutions to a target problem and to develop program synthesis algorithms that automatically discover those solutions in the DSLs. Current focus areas are DSLs and synthesis algorithms for effective pointer analysis — a key component of compiler optimization and bug detection — for explainable graph machine learning, and for identifying effective test cases in system software testing.

Static Program Analysis

Pointer Analysis

Program Synthesis

Domain-Specific Languages

Explainable Graph Learning

Fault Localization

Software Testing

7

TOP-TIER PL PAPERS

10

PUBLICATIONS

4

PC MEMBERSHIPS

14+

INVITED TALKS

EMPLOYMENT

Sep. 2025 – Present	Assistant Professor , DGIST — Department of Computer Science and Engineering
Jul. 2024 – Aug. 2025	Research Professor , Korea University
Mar. 2023 – Jun. 2024	Postdoctoral Researcher , Korea University

EDUCATION

Mar. 2017 – Feb. 2023	Integrated M.S. & Ph.D. , Computer Science and Engineering, Korea University
Mar. 2011 – Feb. 2017	B.S. , Computer Science and Engineering, Korea University

RESEARCH GRANTS

- Programming Language Technology for Explainable Graph Machine Learning (설명 가능한 그래프 기계학습 방법 개발을 위한 프로그래밍 언어 기술 연구) — Principal Investigator

SERVICE & TEACHING

Program Committee

- NSAD 2026** — ACM SIGPLAN Int'l Workshop on Numerical and Symbolic Abstract Domains
- ICFP 2025** — ACM SIGPLAN Int'l Conference on Functional Programming
- SOAP 2025** — ACM SIGPLAN Int'l Workshop on the State Of the Art in Program Analysis
- OOPSLA 2024** — ACM Conf. on Object-Oriented Programming, Systems, Languages, and Applications

Journal Reviewing

- TOSEM (2025, 2026)** — ACM Transactions on Software Engineering and Methodology

Teaching

- 2025 Fall** — Program Analysis (DGIST IC637)
- 2024 Fall** — Data Structures (Korea University COSE214)

PUBLICATIONS

1. **KDD 26** **Minseok Jeon**, Seunghyun Park, and Jun-Gi Jang. *ProgNet: Program-Grounded Evidence Composition for Interpretable Graph Classification*. 32nd ACM SIGKDD Conference on Knowledge Discovery and Data Mining, 2026 (accepted).
2. **OOPSLA 25** Donguk Kim, **Minseok Jeon***, Doha Hwang, and Hakjoo Oh* (*corresponding authors). *PAFL: Enhancing Fault Localizers by Leveraging Project-Specific Fault Patterns*. ACM Conference on Object-Oriented Programming, Systems, Languages, and Applications, Oct. 2025.
3. **PLDI 24** **Minseok Jeon**, Jihyeok Park, and Hakjoo Oh. *PL4XGL: A Programming Language Approach to Explainable Graph Learning*. ACM SIGPLAN Conference on Programming Language Design and Implementation, Jun. 2024.
4. **ICST 23** Jinkook Kim, **Minseok Jeon**, Sejeong Jang, and Hakjoo Oh. *Automating Endurance Test for Flash-based Storage Devices in Samsung Electronics*. IEEE International Conference on Software Testing, Verification and Validation (Industry Track), Apr. 2023.
5. **POPL 22** **Minseok Jeon** and Hakjoo Oh. *Return of CFA: Call-Site Sensitivity Can Be Superior to Object Sensitivity Even for Object-Oriented Programs*. 49th ACM SIGPLAN Symposium on Principles of Programming Languages, Jan. 2022.
6. **IST 21** Donghoon Jeon, **Minseok Jeon**, and Hakjoo Oh. *A Practical Algorithm for Learning Disjunctive Abstraction Heuristics in Static Program Analysis*. Information and Software Technology, Vol. 135, Jul. 2021.
7. **OOPSLA 20** **Minseok Jeon**, Myungho Lee, and Hakjoo Oh. *Learning Graph-based Heuristics for Pointer Analysis without Handcrafting Application-Specific Features*. ACM Conference on Object-Oriented Programming, Systems, Languages, and Applications, Nov. 2020.
8. **TOPLAS 19** **Minseok Jeon***, Sehun Jeong*, Sungdeok Cha, and Hakjoo Oh (*co-first authors). *A Machine-Learning Algorithm with Disjunctive Model for Data-Driven Program Analysis*. ACM Transactions on Programming Languages and Systems, Jun. 2019.
9. **OOPSLA 18** **Minseok Jeon**, Sehun Jeong, and Hakjoo Oh. *Precise and Scalable Points-to Analysis via Data-Driven Context Tunneling*. ACM Conference on Object-Oriented Programming, Systems, Languages, and Applications, Nov. 2018.
10. **OOPSLA 17** Sehun Jeong*, **Minseok Jeon***, Sungdeok Cha, and Hakjoo Oh (*co-first authors). *Data-Driven Context-Sensitivity for Points-to Analysis*. ACM Conference on Object-Oriented Programming, Systems, Languages, and Applications, Oct. 2017.

SELECTED TALKS

Nov. 2025	AI를 활용한 수업자료 자동 생성 프레임워크 — AI 활용 경진대회, DGIST
Oct. 2025	Developing Cost-Effective Combinations of Static Analysis Techniques — Dagstuhl Seminar 25421, Germany
Aug. 2025	컨텍스트 터널링: 고정관념에 도전하기 — SIGPL Summer School, Sogang University
Jul. 2025	성공적인 연구를 위한 문제 발견하기 — Software Analysis Lab Seminar, Korea University
Aug. 2024	될 때까지 개선하기 — SIGPL Summer School, Sungkyunkwan University
Jun. 2024	PL4XGL: A Programming Language Approach to Explainable Graph Learning — PLDI 2024, Copenhagen, Denmark
May 2024	PL4XGL: 프로그래밍 언어 기법을 활용한 설명 가능한 그래프 기계학습 방법 — ProSysLab Seminar, KAIST
Jan. 2024	그래프 패턴 언어를 활용하여 다양한 분야의 핵심 문제 접근하기 — STAAR Workshop, KAIST
Nov. 2023	Data-Driven Static Analysis — CSE GSAI Seminar, POSTECH
Jan. – Feb. 2022	Return of CFA: Call-Site Sensitivity Can Be Superior to Object Sensitivity — POPL 2022, Philadelphia, USA; STAAR Workshop, Jeju
Nov. 2020	Learning Graph-based Heuristics for Pointer Analysis — OOPSLA 2020, Online; KSC 2020
Nov. 2018	Precise and Scalable Points-to Analysis via Data-Driven Context Tunneling — OOPSLA 2018, Boston, USA
Jan. – Jun. 2018	Data-Driven Context-Sensitivity for Points-to Analysis — KCSE 2018, Pyeongchang; KCC 2018, Jeju

RESEARCH GROUP — PLX LAB @ DGIST

PLX Lab develops programming language technologies for problems in other computer science domains, along two directions: **PL4SE** (PL for software engineering) and **PL4ML** (PL for machine learning). The lab is recruiting students interested in program analysis, synthesis, and language design. — <https://dgistpl.github.io>