Minseok Jeon

Assistant Professor
DGIST
+82-10-4139-4729 minseok_jeon@dgist.ac.kr

Research Interests

I am broadly interested in developing programming language techniques for addressing challenges in various fields, including software engineering and machine learning. Specifically, I take pleasure in designing domain-specific programming languages (DSLs) and developing program synthesis algorithms to address the challenges. In particular, my focus is on designing DSLs and synthesis algorithms for effective pointer analysis, a key component in compiler optimization, and explainable graph machine learning. I am also interested in developing DSLs tailored to identify effective test cases in system software testing.

Education Background

Integrated M.S. & Ph.D. in Computer Science and Engineering. Korea University — *Mar. 2017 – Feb 2023*

B.S. in Computer Science and Engineering. Korea University — *Mar. 2011 – Feb 2017*

Employment History

Assistant Professor. DGIST — *September. 2025 – Present*

Research Professor. Korea University — *July. 2024 – August. 2025*

Postdoctoral Researcher. Korea University — *Mar. 2023 – June. 2024*

Publications

Published papers on programming languages in premier conferences (OOPSLA 2025, PLDI 2024, POPL 2022, OOPSLA 2020, OOPSLA 2018, and OOPSLA 2017) and journal (TOPLAS 2019).

1. Donguk Kim, Minseok Jeon*, Doha Hwang, Hakjoo Oh* (*corresponding authors).
   PAFL: Enhancing Fault Localizers by Leveraging Project-Specific Fault Patterns.
   OOPSLA 2025: ACM Conference on Object-oriented Programming, Systems, Languages, and Applications. October 2025

2. Minseok Jeon, Jihyeok Park, and Hakjoo Oh.
   PL4XGL: A Programming Language Approach to Explainable Graph Learning.
   PLDI 2024 : ACM SIGPLAN Conference on Programming Language Design and Implementation. June 2024

3. Jinkook Kim, Minseok Jeon, Sejeong Jang, and Hakjoo Oh.
   Automating Endurance Test for Flash-based Storage Devices in Samsung Electronics.
   ICST 2023: IEEE International Conference on Software Testing, Verification and Validation (Industry Track). April 2023

4. Minseok Jeon and Hakjoo Oh.
   Return of CFA: Call-Site Sensitivity Can Be Superior to Object Sensitivity Even for Object-Oriented Programs.
   POPL 2022: The 49th ACM SIGPLAN Symposium on Principles of Programming Languages. January 2022

5. Donghoon Jeon, Minseok Jeon, and Hakjoo Oh.
   A Practical Algorithm for Learning Disjunctive Abstraction Heuristics in Static Program Analysis.
   IST: Information and Software Technology. July 2021

6. Minseok Jeon, Myungho Lee, and Hakjoo Oh.
   Learning Graph-based Heuristics for Pointer Analysis without Handcrafting ApplicationSpecific Features.
   OOPSLA 2020: ACM Conference on Object-Oriented Programming, Systems, Languages, and Applications. November 2020

7. Minseok Jeon*, Sehun Jeong*, Sungdeok Cha, and Hakjoo Oh (*co-first authors).
   A Machine-Learning Algorithm with Disjunctive Model for Data-Driven Program Analysis.
   TOPLAS: ACM Transactions on Programming Languages and Systems. June 2019

8. Minseok Jeon, Sehun Jeong, and Hakjoo Oh.
Precise and Scalable Points-to Analysis via Data-Driven Context Tunneling.
OOPSLA 2018: ACM Conference on Object-Oriented Programming, Systems, Languages, and Applications.
November 2018

9. Sehun Jeong*, Minseok Jeon*, Sungdeok Cha, and Hakjoo Oh (*co-first authors).
Data-Driven Context-Sensitivity for Points-to Analysis.
OOPSLA 2017: ACM Conference on Object-Oriented Programming, Systems, Languages, and Applications.
October 2017

Research Grants

1. 설명 가능한 그래프 기계학습 방법 개발을 위한 프로그래밍 언어 기술 연구 (Programming Language Technology for Explainable Graph Machine Learning)

Service

Program committee (PC) members:

1. ICFP 2025: ACM SIGPLAN International Conference on Functional Programming
2. SOAP 2025: ACM SIGPLAN International Workshop on the State Of the Art in Program Analysis
3. OOPSLA 2024: ACM Conference on Object-Oriented Programming, Systems, Languages, and Applications

Journal Reviewer:

1. TOSEM: ACM Transactions on Software Engineering and Methodology (2025)

Teaching Experience

- **2025 Fall:** Program Analysis (DGIST IC637)
- **2024 Fall:** Data Structure (Korea University COSE214)

Talks

1. 컨텍스트 터널링: 고정관념에 도전하기. SIGPL Summer School, Seogang University. Aug. 21 2025.
2. 성공적인 연구를 위한 문제 발견하기. SAL Lab Seminar, Korea University. Jul. 18 2025.
3. 될 때까지 개선하기. SIGPL Summer School, Sungkyunkwan University. Aug. 23 2024.
4. PL4XGL: A Programming Language Approach to Explainable Graph Learning. Paper presentation at PLDI 2024. Copenhagen, Denmark. June 27 2024.
5. PL4XGL: 프로그래밍 언어 기법을 활용한 설명 가능한 그래프 기계학습 방법. KAIST (ProSysLab Seminar). May 03 2024.
6. 그래프 패턴 언어를 활용하여 다양한 분야의 핵심 문제 접근하기. STAAR Workshop. KAIST. Jan 30 2024.
7. Data-Driven Static Analysis. POSTECH. Pohang, Korea. Nov 15 2023.
8. Return of CFA: Call-Site Sensitivity Can Be Superior to Object Sensitivity Even for Object- Oriented Programs. STAAR Workshop. Jeju. Feb 11 2022.
9. Return of CFA: Call-Site Sensitivity Can Be Superior to Object Sensitivity Even for Object- Oriented Programs. Paper presentation at POPL 2022. Philadelphia, USA. Jan 19 2022.
10. Learning Graph-based Heuristics for Pointer Analysis without Handcrafting Application- Specific Features. KSC2020.
11. Learning Graph-based Heuristics for Pointer Analysis without Handcrafting Application- Specific Features. Paper presentation at OOPSLA 2020. Online. Nov 20 2020.

12. Precise and Scalable Points-to Analysis via Data-Driven Context Tunneling. Paper presen- tation at OOPSLA 2018. BOSTON, USA. Nov 8 2018.

13. Data-Driven Context-Sensitivity for Points-to Analysis, KCC 2018. JeJu, Korea.

14. Data-Driven Context-Sensitivity for Points-to Analysis, KCSE 2018. Pyeongchang, Korea.