Yusuke Izawa, Assistant Professor, PyPy Contributor

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Education

2020-2023 **Ph.D. Mathematical and Computing Science, Tokyo Institute of Technology**.
Thesis title: *Supporting multi-scope and multi-level compilation in a meta-tracing just-in-time compiler.* (GPA 3.49)

2018-2020 **M.Sc. Mathematical and Computing Science, Tokyo Institute of Technology**.
Thesis title: *Stack Hybridization: A Mechanism for Bridging Two Compilation Strategies in a Meta Compiler Framework.*

2014-2018 **B.Sc. Mathematical and Computing Science, Tokyo Institute of Technology**.
Thesis title: *BacCaml: A Meta-JIT Compiler Based on Both Tracing and Method JIT Compilations.*

Employment History

2025.06 – 2025.09 Heinrich-Heine-Universität Düsseldorf, Guest Researcher.

2023.04 – now Tokyo Metropolitan University, Assistant Professor.

2023.04 – 2024.03 IBM Research – Tokyo, Research Scientist.

2023.04 – 2023.04 JSPS Research Fellow PD. (declined)

2021.08 – 2021.10 IBM Research – Tokyo, Research Internship (Paid).

2021.04 – 2023.03 JSPS Research Fellow DC2.

2020.11 – 2023.03 Tokyo Institute of Technology, Dept. of Math. and Comp., Research Assistant.

Selected Grants, Honours and Scholarships

2025 **Tokyo Metropolitan University, Dispatching of Young Researchers to Overseas to Strengthen Research Capabilities**. Living expenses are covered by Tokyo Metropolitan University Fund.

2024 **Graint-in-Aid for Research Activity Start-up**. Research expenses are convered by KAKENHI.

2023 **Research Fellowship for Young Scientists (JSPS PD).** Fellowship from the Japan Society for the Promotion of Science (JSPS), covering living expenses. Research expenses covered by KAKENHI. (declined)

2021 **Research Fellowship for Young Scientists (JSPS DC2)**. Fellowship from the Japan Society for the Promotion of Science (JSPS), covering living expenses. Research expenses covered by KAKENHI.

2020 **JST Strategic Basic Research Programs ACT-X**. Research expenses covered by Japan Science and Technology Agency (JST).

2019 **2nd Place, Graduate Category, ACM Student Research Competition, *Association for Computing Machinery*. [*]**

Selected Publications

Journal

1. Yusuke Izawa, Hidehiko Masuhara, and Carl Friedrich Bolz-Tereick. "A Lightweight Method for Generating Multi-Tier JIT Compilation Virtual Machine in a Meta-Tracing Compiler Framework (Artifact)." In: *Dagstuhl Artifacts Series* 11.2 (2025), 16:1–16:4. ISSN: 2509-8195. DOI: 10.4230/DARTS.11.2.16. URL: https://drops.dagstuhl.de/entities/document/10.4230/DARTS.11.2.16.
2. Yusuke Izawa, Hidehiko Masuhara, Carl Friedrich Bolz-Tereick, and Youyou Cong. "Threaded Code Generation with a Meta-Tracing JIT Compiler." In: *Journal of Object Technology* (2022), 2:1–11. ISSN: 1660-1769. DOI: 10.5381/jot.2022.21.2.a1. arXiv: 2106.12496.

Conference Proceedings

1. Yusuke Izawa, Junichiro Kadomoto, and Hidetsugu Irie. "VisMorph: A Live Programming Environment for Shape-Adaptive Computers." In: *37th ACM Symposium on User Interfance and Software Technology (UIST)*. 2025.
2. Yusuke Izawa, Hidehiko Masuhara, and Carl Friedrich Bolz-Tereick. "A Lightweight Method for Generating Multi-Tier JIT Compilation Virtual Machine in a Meta-Tracing Compiler Framework." In: *39th European Conference on Object-Oriented Programming (ECOOP 2025)*. Ed. by Jonathan Aldrich and Alexandra Silva. Vol. 333. Leibniz International Proceedings in Informatics (LIPIcs). Dagstuhl, Germany: Schloss Dagstuhl – Leibniz-Zentrum für Informatik, 2025, 16:1–16:29. ISBN: 978-3-95977-373-7. DOI: 10.4230/LIPIcs.ECOOP.2025.16. arXiv: http://arxiv.org/abs/2504.17460. URL: https://drops.dagstuhl.de/entities/document/10.4230/LIPIcs.ECOOP.2025.16.
3. Yusuke Izawa and Hidehiko Masuhara. "Amalgamating Different JIT Compilations in a Meta-Tracing JIT Compiler Framework." In: *Proceedings of the 16th ACM SIGPLAN International Symposium on Dynamic Languages*. DLS 2020. Virtual, USA: Association for Computing Machinery, Nov. 17, 2020, pp. 1–15. ISBN: 9781450381758. DOI: 10.1145/3426422.3426977.

Selected Academic Services

- 2026 Program Committee, PEPM 2026.
- 2025 Organizer and Program Co-Chair, VMIL 2025.
- Program Committee, Programming and Programming Language Workshop (PPL).
- 2024 External Reviewer, The Programming Journal, Volume 8. Issue 2.
- Reviewer, ACM Transactions on Architecture and Code Optimization.
- Reviewer, ACM Transactions on Software Engineering and Methodology.
- Program Committee, MPLR 2024, ICCQ 2024, MoreVMs 2024.
- 2023 Program Committee, ICSME 2023 (Industry Track), ICCQ 2023.
- Artifact Evaluation Committee, The Programming Journal, Volume 8.

Teaching

- 2024 Research Seminar for Electric Engineering and Computer Science. Tokyo Metropolitan University.
- Scripting Language Exercise. Tokyo Metropolitan University.
- Information System Experiment I, II. Tokyo Metropolitan University.
- Programming Exercise (EECS) II. Tokyo Metropolitan University.