

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 ━ **Grant-in-Aid for Research Activity Start-up.** Research expenses are covered 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 Interface 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

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| 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

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| 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. |