

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

- 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.**









Grants, Honours and Scholarships

- 2024 **Grant-in-Aid for Research Activity Start-up.** Research expenses are covered by KAKENHI.
- 2023 **Long-Term Performance Award.** Award from IBM, based on skills needed for the future, long-term career potential, and strong individual performance.
- 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).
- Tokyo Tech Tsubame Scholarship for Doctoral Students.** Covering living expenses.
- 2019 **Travel Grants by Information Science Incentive Fund.** By dept. of mathematical and computing science, Tokyo Tech.
- 2nd Place, Graduate Category, ACM Student Research Competition, Association for Computing Machinery. [*]**
- 2014 **Scholarship by the Showa Scholarship Foundation.** Covering living expenses by Showa Scholarship Foundation.










Selected Projects

- 2021-  **Adaptive RPython.** This project lets the RPython framework do an adaptive compilation, which can select an appropriate compilation strategy depending on a runtime situation.
- 2020-  **Poly2Kanon.** Kanon is a live programming environment that can visualize data structures while editing code. Poly2Kanon aims to extend Kanon to support multi-language and multi-environment features.
- 2019-2020  **BacCaml.** It is a simple meta-tracing compiler framework, which can perform trace- and method-based compilations. It implements RPython-like tracing compilation by extending the MinCaml compiler.




Selected Academic Services

- 2024  External Reviewer, The Programming Journal, Volume 8. Issue 2.
-  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.
- 2022  Artifact Evaluation Committee, The Programming Journal, Volume 7.
- 2021  Artifact Evaluation Committee, PACT 2021, ECOOP 2021.
- 2020  Co-reviewer of Onward! Essays, SPLASH 2020.

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.
- 2020  Programming II, Tokyo Institute of Technology, Math. and Comp. Science, TA.
- 2019  Programming II, Tokyo Institute of Technology, Math. and Comp. Science, TA.
-  Introduction to Computer Science, Tokyo Institute of Technology, TA.
- 2018  Programming II, Tokyo Institute of Technology, Math. and Comp. Science, TA.
-  Information Literacy I, Tokyo Institute of Technology, TA.

Skills

- Languages  English (fluent), Japanese (native)
- Coding  OCaml (S), Scala (S), Python (S), C (A), Java (A), Ruby (A), Shell (A), R (B), SQL (C), \LaTeX (SS)
- Misc.  Academic research, teaching, training, consultation, \LaTeX typesetting and publishing.