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.

Selected Grants, Honours and Scholarships

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

2023 **Long-Term Performance Award.** Award from IBM, based on skills needed for the future, long-term caree potential, and strong indivisual 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).

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

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.

Selected Projects (continued)

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.