Yusuke Izawa, Ph.D. student

me@yizawa.com @yusuke_izawa
https://3tty0n.github.io

Education

2020-now **Ph.D., Tokyo Institute of Technology**.

2018-2020 **M.Sc. Mathematical and Computing, 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, Tokyo Institute of Technology**.
Thesis title: *BacCaml: A Meta-JIT Compiler Based on Both Tracing and Method JIT Compilations*

Employment History

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

2020.11 – 2023.3 Tokyo Institute of Technology, Dept. of Math. and Comp., Research Assistant.

2018.6 – 2019.2 Recruit Marketing Partners, Inc., Software Engineer, Self-employment.

2018.8 Cookpad, Inc., Software Engineer, Internship (**Won 2nd Place**, Paid).

2017.4 – 2018.3 FOLIO, Inc., Software Engineer, Internship (Paid).

2016.8 – 2017.3 DOWANGO, Inc., Software Engineer, Internship (Paid).

2016.1 – 2016.6 Summaly, Inc., Software Engineer, Internship (Paid).

Grants, Honours and Scholarships

2021 **Research Fellowship for Young Scientists (JSPS DC2)**. Fellowship from the Japan Society for the Promotion of Science (JSPS), covering living expenses. Research expensec 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 expensed by Showa Scholarship Foundation.

Publications

Peer-reviewed

1. Yusuke Izawa, Hidehiko Masuhara, Carl Friedrich Bolz-Tereick, and Cong Youyou. "Threaded Code Generation with a Meta-tracing JIT Compiler." In: *Proceedings of the 16th Workshop on Implementation, Compilation, Optimization of Object-Oriented Languages, Programs and Systems*. ICOOOLPS 2021.

Position paper. Virtual, July 13, 2021, pp. 1–5. arXiv: 2106.12496. URL: https://conf.researchr.org/track/ecoop-issta-2021/ecoop-issta-2021-icooolps.

2. 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.

3. Yusuke Izawa. "BacCaml: The Meta-Hybrid Just-in-Time Compiler." In: *Proceedings of the Conference Companion of the 3rd International Conference on Art, Science, and Engineering of Programming*. Programming '19. **Awarded [*]**. Genova, Italy: Association for Computing Machinery, Apr. 2, 2019. ISBN: 9781450362573. DOI: 10.1145/3328433.3328466.

4. Yusuke Izawa, Hidehiko Masuhara, and Tomoyuki Aotani. "Extending a Meta-Tracing Compiler to Mix Method and Tracing Compilation." In: *Proceedings of the Conference Companion of the 3rd International Conference on Art, Science, and Engineering of Programming*. Programming '19. Genova, Italy: Association for Computing Machinery, Apr. 2, 2019. ISBN: 9781450362573. DOI: 10.1145/3328433.3328439.

Non Peer-reviewed

1. Yusuke Izawa, Hidehiko Masuhara, Tomoyuki Aotani, and Youyou Cong. "A Stack Hybridization for Meta-hybrid Just-in-time Compilation." In: *Proceedings of the 36th JSSST Annual Conference*. Ed. by Kei Ito. nonrefereed. Shibaura Institute of Technology, Tokyo, Japan, Aug. 27, 2019, No. 2–L. URL: http://jssst.or.jp/files/user/taikai/2019/proceedings.html.

Talks

Oral and Poster Sessions

1. 高橋 修祐, 伊澤 侑祐, 増原 英彦, and 叢 悠悠. **言語実現フレームワークに基づく汎言語的オブジェクトグラフ収集手法**. 情報処理学会第 135 回プログラミング研究会 2021-2-(7). July 21, 2021. URL: https://sigpro.ipsj.or.jp/pro2021-2/program/.

2. Yusuke Izawa and Hidehiko Masuhara. *Amalgamating Different JIT Compilations in a Meta-tracing JIT Compiler Framework*. The 23nd JSSST Workshop on Programming and Programming Languages. Reproduction of the DLS'20 talk at JSSST PPL. 2021. URL: https://jssst-ppl.org/workshop/2021/.

3. Yusuke Izawa, Hidehiko Masuhara, and Youyou Cong. *An Interpreter Design for Supporting Different JIT Compilations in RPython Framework*. The 23nd JSSST Workshop on Programming and Programming Languages. Poster Presentation. 2021. URL: https://easychair.org/smart-program/PPL2021/.

4. Shusuke Takahashi, Yusuke Izawa, Hidehiko Masuhara, and Youyou Cong. **汎言語的ライブプログラミング環境のためのデータ構造解析手法**. The 23nd JSSST Workshop on Programming and Programming Languages. Poster Presentation. 2021. URL: https://easychair.org/smart-program/PPL2021/.

5. Yusuke Izawa and Hidehiko Masuhara. *Making different JIT Compilations Dancing to the Same Tune, Acting in the Meta-level*. The 22nd JSSST Workshop on Programming and Programming Languages. Poster Presentation. 2020. URL: https://easychair.org/smart-program/PPL2020/.

6. Hidehiko Masuhara, Shusuke Takahashi, Yusuke Izawa, and Youyou Cong. *Toward a Multi-Language and Multi-Environment Framework for Live Programming*. Talk at the 2020 Workshop on Live Programming (colocated with SPLASH 2020). **Peer-reviewed**. 2020. URL: https://2020.splashcon.org/home/live-2020.

7. Shusuke Takahashi, Yusuke Izawa, Hidehiko Masuhara, and Youyou Cong. **ライブプログラミング環境は多言語化/多開発環境化の夢を見るか**. The 37th JSSST Anual Conference. Japan Society for Software Science and Technology. Poster Presentation. 2020. URL: https://jssst2020.wordpress.com/program/.

8 Yusuke Izawa, Hidehiko Masuhara, and Tomoyuki Aotani. **メタ混合 *JIT* コンパイラの提案**. The 20nd JSSST Workshop on Programming and Programming Languages. Poster Presentation. 2018. URL: `https://jssst-ppl.org/workshop/2018/program.html`.

Academic Services

2021 Artifact Evaluation Committee, PACT 2021.
Artifact Evaluation Committee, ECOOP 2021.
2020 Member of Student Volunteer, SPLASH 2020.
Co-reviewer of Onward! Essays, SPLASH 2020.
Candidate of Programming Language Mentoring Workshop, PLDI 2020.
2019 Member of Student Volunteer, Programming 2019.

Teaching

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.