

# Yusuke Izawa, Ph.D. student

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🌐 <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

- 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)**
- 2017.4 – 2018.3 📖 FOLIO, Inc., Software Engineer, Internship.
- 2016.8 – 2017.3 📖 DOWANGO, Inc., Software Engineer, Internship.
- 2016.1 – 2016.6 📖 Summaly, Inc., Software Engineer, Internship




## 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 expense 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*. ICPOOLPS 2021. Short paper. Virtual, July 13, 2021. 🔗 URL: <https://arxiv.org/abs/2106.12496>.

- 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-(X). 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 23rd 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 23rd 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 23rd 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 Annual Conference. Japan Society for Software Science and Technology. Poster Presentation. 2020.  URL: <https://jssst2020.wordpress.com/program/>.






## Academic Services

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- 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

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- 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

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- 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.