Yudai Tanabe

Email: yudaitnb@prg.is.titech.ac.jp
Website: https://yudaitnb.github.io/

Personal Statement

I am an Assistant Professor in Department of Mathematical and Computing Science, School of Computing, Tokyo Institute of Technology. I received my B.S., M.S., and D.S. degrees from Department of Mathematical and Computing Science, School of Computing, Tokyo Institute of Technology in 2018, 2020, and 2023 respectively. Formerly, I was a Japan Society for the Promotion of Science (JSPS) Research Fellow at Tokyo Institute of Technology (2022-2023), and a program-specific researcher (postdocoral position) in Computer Software Group, Department of Communications and Computer Engineering, Graduate School of Informatics, Kyoto University (2023-2024).

Research Interest

My research interests are in ***programming language design*** and ***programming language theory***. I am currently working on the following research projects: Programming Language with Versions (APLAS'23, SLE'22, <Programming>'22), Space-efficient Gradual Typing (PLDI'24), and Safe Language Interoperability.
I've also interested in the following topics:

- Advanced type systems, including effect/coeffect calculi and gradual type systems

- Meta-programming

Education

Doctor of Science		Apr. 2020 – Mar. 2023
Tokyo Institute of Technology		*Tokyo, Japan*
Master of Science		Apr. 2019 – Mar. 2020
Tokyo Institute of Technology		*Tokyo, Japan*
Bachelor of Science		Apr. 2014 – Mar. 2018
Tokyo Institute of Technology		*Tokyo, Japan*

Grants

JSPS Grant-in-Aid for Research Activity Start-up		Oct. 2023 – Mar. 2025
Japan Society for the Promotion of Science (JSPS)		*KAKENHI 23K19961*
JSPS Research Fellowship for Young Scientists (DC2)		Apr. 2022 – Mar. 2024
Japan Society for the Promotion of Science (JSPS), (Declined on Mar. 2023)		*KAKENHI 22KJ1313 / 22J14382*

Grants (Co-investigator)

JSPS Grant-in-Aid for Scientific Research (B)		Apr. 2023 – Mar. 2028
Japan Society for the Promotion of Science (JSPS)		*KAKENHI 23H03368*
JSPS Grant-in-Aid for Scientific Research (A)		Apr. 2020 – Mar. 2026
Japan Society for the Promotion of Science (JSPS)		*KAKENHI 20H00582*

Fellowships

JSPS Research Fellowship for Young Scientists (DC2)		Apr. 2022 – Mar. 2024
Japan Society for the Promotion of Science (JSPS), (Declined on Mar. 2023)		*KAKENHI 22KJ1313 / 22J14382*
Tokyo Tech Tsubame Scholarship		Apr. 2020 – Mar. 2022
Tokyo Institute of Technology		

Job Experience

Assistant Professor	Apr. 2024 – Mar. 2029
Tokyo Institute of Technology	*Tokyo, Japan*
Postdoctoral Researcher	Apr. 2023 – Mar. 2025
Computer Software Group, Kyoto University	*Kyoto, Japan*
JSPS Research Fellow (DC2)	Apr. 2022 – Mar. 2023
Japan Society for the Promotion of Science (JSPS)	*Tokyo, Japan*
IBM Research Tokyo Student Intern (Paid Intern)	Nov. 2021 – Dec. 2021
IBM Research Tokyo	*Online*

- Research and Development on a Java Compiler

Research Assistant	May. 2021 – Present
Tokyo Institute of Technology	*Tokyo, Japan*

- Research and Development on Live Programming Environment

IBM Research Tokyo Student Intern (Paid Intern)	Jul. 2018 – Aug. 2018
IBM Research Tokyo	*Tokyo, Japan*

- Research and Development on a Java Compiler

Editorial & Technical Assistant	Mar. 2014 – Present
MYU Research	*Tokyo, Japan*

- Editorial & Technical Support for Scientific Journal (Sensing Technology, Applied Physics)

Teaching Experience as an Educator

Programming II	2024 –
Tokyo Institute of Technology	*Tokyo, Japan*
Forum on Computing S3/S4/S5/F3/F4/F5	2024 –
Tokyo Institute of Technology	*Tokyo, Japan*

Teaching Experience as a TA

Programming I (Teaching Assistant)	2019 – 2020
Tokyo Institute of Technology	*Tokyo, Japan*
Introduction to Computer Science (Teaching Assistant)	2018 – 2020
Tokyo Institute of Technology	*Tokyo, Japan*
Introduction to Information Literacy (Teaching Assistant)	2018 – 2020
Tokyo Institute of Technology	*Tokyo, Japan*

Technical Skills

Languages: Haskell, OCaml, Java, Scala, SQL, JavaScript, HTML/CSS

Publications (peer-reviewed)

Space-Efficient Polymorphic Gradual Typing, Mostly Parametric	2024

Atsushi Igarashi, Shota Ozaki, Taro Sekiyama, and Yudai Tanabe

- In Proceedings of the ACM on Programming Languages (PACMPL), Vol. 8 Issue PLDI, 2024.

Compilation Semantics for a Programming Language with Versions	2023

Yudai Tanabe, Luthfan Anshar Lubis, Tomoyuki Aotani, and Hidehiko Masuhara

- In Programming Languages and Systems. APLAS 2023. Lecture Notes in Computer Science, vol 14405.

A Step toward Programming with Versions in Real-World Functional Languages	2022

Yudai Tanabe, Luthfan Anshar Lubis, Tomoyuki Aotani, and Hidehiko Masuhara

- In Proceedings of the 14th International Workshop on Context-Oriented Programming: Advanced Modularity for Run-time Composition (COP '22).

BatakJava: an Object-Oriented Programming Language with Versions   2022

Luthfan Anshar Lubis, Yudai Tanabe, Tomoyuki Aotani, and Hidehiko Masuhara

- In Proceedings of the 15th International Conference on Software Language Engineering (SLE '22).

A Functional Programming Language with Versions   2022

Yudai Tanabe, Luthfan Anshar Lubis, Tomoyuki Aotani, and Hidehiko Masuhara

- In the Journal of *The Art, Science, and Engineering of Programming*, Vol. 6, No. 1, 2022.

A Context-Oriented Programming Approach to Dependency Hell   2018

Yudai Tanabe, Tomoyuki Aotani, and Hidehiko Masuhara

- In Proceedings of the 10th International Workshop on Context-Oriented Programming: Advanced Modularity for Run-time Composition (COP '18). ACM, New York, NY, USA, 8-14.

INVITED TALKS

A Programming Language With Versions   May 2024

Yudai Tanabe   *Chiba Institute of Technology*

- In the STAIR Lab Seminar, Software Technology & Artificial Intelligence Research Laboratory, Chiba Institute of Technology.

A Language to Safely Exploit Multi-Version Modules at the Expression-level   Jul. 2021

Yudai Tanabe   *Online*

- In the 13th Workshop on Context-Oriented Programming: Advanced Modularity for Run-time Composition (COP 2021).

ACADEMIC SERVICE

<Programming> 2025   2025

Artifact Evaluation Committee   *Prague, Czechia*

PPL 2025   2025

Treasurer

ATVA 2024   2024

Poster Chair   *Kyoto, Japan*

APLAS 2024 SRC & Posters   2024

Organizer, Selection Committee, and Judge   *Kyoto, Japan*

TyDe 2024   2024

Program Committee   *Milan, Italy*

ICFP 2024   2024

Artifact Evaluation Committee   *Milan, Italy*

ECOOP 2024   2024

Extended Review Committee and Artifact Evaluation Committee   *Vienna, Austria*

PLDI 2024   2024

Artifact Evaluation Committee   *Copenhagen, Denmark*

ICCQ 2024   2024

Program Committee   *Russia*

APSEC 2023 SRC   2023

Program Committee   *Soeul, Korea*

APLAS 2023 SRC & Posters   2023

Judge   *Taipei, Taiwan*

ICSME 2023 Industry Track   2023

Program Committee   *Bogotá, Colombia*

COP 2023   2023

Organizing Committee and Program Committee Chair   *Seattle, USA*

ICCQ 2023
Program Committee
<div align="right">

2023
St. Petersburg, Russia
</div>

ICCQ 2023   2023
Program Committee   *St. Petersburg, Russia*

COP 2022   2022
Organizing Committee and Program Committee Chair   *Online*

PeerJ Computer Science   2022
Reviewer   *Online*

PEPM History Project   2022
Organizing Committee   *Online*

Scheme 2021   2021
Reviewer   *Online*

PPL 2021   2021
Panelist (Social Event)   *Online*

Onward! Essays 2020   2020
Co-reviewer   *Online*

SPLASH/ECOOP 2020   2020
Student Volunteer   *Online*