# Hiromi ISHII

Research and Development Department,
DeepFlow, Inc.
konn.jinro@gmail.com
Visiting Researcher at Institute of Statistical Mathematics

## EDUCATION

| | |
|---|---|
| Ph.D. in Math<br>2016 - 2019 | University of Tsukuba, Tsukuba-city, Ibaraki prefecture, Japan.<br>*Thesis*: Bidirectional Interplay between Mathematics and Computer Science: Safety and Extensibility in Computer Algebra and Haskell |
| M.S. in Math<br>2016 | University of Tsukuba, Tsukuba-city, Ibaraki prefecture, Japan.<br>*Thesis:* On Regularity Properties of Sets of Reals and Inaccessible Cardinals |
| B.A.,<br>*summa cum laude* | Waseda University, Tokyo, Japan, 2014 |

## TEACHING

*University of Tsukuba, College of Mathematics*

**Teaching Assistant** Functional Programming Exercise, Spring 2014; Spring 2015; Spring 2016; Spring 2017; Spring 2018

**Teaching Assistant** Basics of Mathematics, Spring 2016

## RESEARCH

*University of Tsukuba, College of Mathematics*

**Research Assistant** Spring 2016; Summer 2016; Fall 2016; Winter 2016

## SELECT FELLOWSHIPS AND AWARDS

- Research Fellowship for Young Scientists (DC2), Japan Society for the Promotion of Science (2017-2019)
- 14th Meikei Prize (2016)
- Highest Award of Deans' Prize of Scool of Fundamental Science and Engineering, Waseda University (2014)

## REFEREED CONFERENCE PRESENTATIONS

September 2021, *Automatic differentiation with higher infinitesimals, or computational smooth infinitesimal analysis in Weil algebra.*

September 2018, *A Purely Functional Computer Algebra System Embedded in Haskell.* Computer Algebra in Scientific Computing 2018, Lille, France.

March 2016, *Freer Monads, More Extensible Effects.* Programming and Programming Language Workshop (PPL) 2016, Okayama-prefecture, Japan.

## NON-REFEREED CONFERENCE PRESENTATIONS

November 2017, *Reflection Principle and construction of saturated ideals on* $\mathcal{P}_{\omega_1}\,\lambda$. Workshop on Iterated Forcing Theory and Cardinal Invariants, Kyoto-prefecture, Japan.

# BIBLIOGRAPHY


[1] Hiromi Ishii, *A purely functional computer algebra system embedded in Haskell*, Computer Algebra in Scientific Computing (Lille, France), ed. by Vladimir P. Gerdt, Wolfram Koepf, and Werner M. Seiler, vol. 11077, Lecture Notes in Computer Science, Springer, Cham, 2018, pp. 288–303, ISBN: 978-3-319-99638-7, DOI: 10.1007/978-3-319-99639-4_20, arXiv: 1807.01456.

[2] ———, *On regularity properties of set of reals and inaccessible cardinals*, MA thesis, Tsukuba University, 2016.

[3] ———, *`smooth`: computational smooth infinitesimal analysis*, 2020, URL: `https://github.com/konn/smooth` (visited on 12/28/2020).

[4] Oleg Kiselyov and Hiromi Ishii, *Freer monads, more extensible effects*, Proceedings of the 2015 ACM SIGPLAN Symposium on Haskell, Haskell '15, Vancouver, BC, Canada: ACM, 2015, pp. 94–105, ISBN: 978-1-4503-3808-0, DOI: 10.1145/2804302.2804319.