Jan Stolarek, PhD

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GitHub: `https://github.com/jstolarek`
BitBucket: `https://bitbucket.org/jstolarek`

Polish citizen. Speaks English (fluent).

Selected professional career

2022–to date

Senior Haskell Developer and Architect at BinarApps Sp. z o.o., Łódź, Poland

- design and development of distributed applications on Cardano blockchain, including smart contract implementation in Plutus (a Haskell EDSL)
- design and development of Midnight blockchain, leveraging Cardano as a trusted security layer

Technology: Haskell, Cardano/Plutus

2016–2021

Research Associate at Laboratory for Foundations of Computer Science, University of Edinburgh, UK

- development of a Haskell EDSL for language integrated queries with experimental support for provenance tracking
- Haskell implementation of slicing for a simple functional language with imperative features
- formalisation of a slicing algorithm using Coq proof assistant
- development and maintenance of Links programming language

Technology: Haskell, OCaml, Coq

2012–2016

Lecturer at the Institute of Information Technology, Lodz University of Technology, Poland

- design and implementation of Injective Type Families in GHC
- design and implementation of `singletons` library for promoting Haskell term-level functions to the type level using Template Haskell
- numerous Template Haskell improvements and fixes in GHC

Technology: Haskell

2013

Intern at Microsoft Research, Cambridge, UK

- implementation of new branchless PrimOps in GHC (Glasgow Haskell Compiler)
- improving optimisations performed by the Cmm pipeline in GHC

Technology: Haskell

Education

2012	**PhD** in Computer Science, Lodz University of Technology (Poland) *Thesis:* Orthogonal wavelet synthesis based on signal processing outcome.
2008	**MEng** in Computer Science, Lodz University of Technology (Poland) *Thesis:* User identification based on fingerprint analysis.

Professional skills

Programming	*Expert knowledge:* Haskell with GHC extensions, Plutus *Advanced knowledge:* Bash *Intermediate knowledge:* Coq, OCaml, C
Tools	*Expert knowledge:* git *Intermediate knowledge:* Emacs, LaTeX
OSes	*Expert knowledge:* Linux (Debian)

Selected peer-reviewed papers

2022	F. Emrich, J. Stolarek, J. Cheney, and S. Lindley. Constraint-Based Type Inference for FreezeML. *Proceedings of the ACM on Programming Languages*, 6(ICFP):570–595, 2022
2020	F. Emrich, S. Lindley, J. Stolarek, J. Cheney, and J. Coates. FreezeML: Complete and Easy Type Inference for First-Class Polymorphism. In *Proceedings of the 41st ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI '20)*, 2020
2019	J. Stolarek and J. Cheney. Verified Self-Explaining Computation. In *13th International Conference on Mathematics of Program Construction (MPC '19)*, 2019
2018	J. Stolarek and J. Cheney. Language-integrated provenance in Haskell. *The Art, Science, and Engineering of Programming*, 2(3), 2018
2017	W. Ricciotti, J. Stolarek, R. Perera and J. Cheney. Imperative Functional Programs that Explain their Work. *Proceedings of the ACM on Programming Languages*, 1(ICFP):Article 14, 2017
2015	J. Stolarek, S. Peyton Jones, and R. A. Eisenberg. Injective Type Families for Haskell. In *Haskell Symposium 2015*, volume 50, pages 118–128, December 2015
2014	R. A. Eisenberg and J. Stolarek. Promoting functions to type families in Haskell. In *Haskell Symposium 2014*, pages 95–106, December 2014

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