

Eric L Seidel

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Work Experience

- **Bloomberg LP** New York, NY
Senior Software Engineer *Aug. 2017 — Current*
 - Designed low-latency caching service of feature enablement flags with real-time updates over Apache Kafka.
 - Accelerated feedback cycle of oracle-testing system for DSL describing financial quotes.
 - Extended FORTRAN parser to support non-standard language features, enabling automated refactoring of legacy codebase.
 - Designed and maintained libraries and infrastructure for writing Haskell at Bloomberg.
- **UC San Diego** La Jolla, CA
Graduate Student Researcher *Sep. 2012 — Aug. 2017*
 - Applied machine-learning techniques to improve type-error localization for Hindley-Milner type systems.
 - * Outperforms other localization techniques on novice type-errors with only one semester of training data (E. L. Seidel, Sibghat, Chaudhuri, Weimer, and Jhala 2017).
 - Built tool to synthesize counter-examples to type errors.
 - * Performs type-checking alongside execution, produces trace demonstrating how program gets stuck (E. L. Seidel, Jhala, and Weimer 2016).
 - Worked on LiquidHaskell, a refinement type-based verifier for Haskell.
 - * Implemented efficient testing framework using refinement types to prune input search space (E. L. Seidel, Vazou, and Jhala 2015).
 - * Verified memory safety and functional correctness of `Data.Text` library, discovered and fixed a memory bug in the process.
- **Bloomberg LP** New York, NY
Software Engineering Intern *Jun. 2016 — Aug. 2016*
 - Worked on Haskell libraries to communicate with existing software infrastructure.
- **Galois, Inc.** Portland, OR
Software Engineering Intern *Sep. 2014 — Dec. 2014*
 - Worked on symbolic verifier for Ivory, an EDSL for programming embedded systems.
- **Fluidinfo Inc.** New York, NY
Software Developer *May 2011 — Sep. 2012*
 - Analyzed and imported large datasets, and assisted with front- and back-end development.
- **Cactus Computational Toolkit** New York, NY
Undergraduate Researcher *Feb. 2010 — May 2011*
 - Developed tools to assist in the assembly and building of complex simulation software.

Education

- **UC San Diego** La Jolla, CA
Ph.D. Computer Science 2017
 - Thesis: “Data-Driven Techniques for Type Error Diagnosis”
- **The City College of New York** New York, NY
B.S. Computer Science 2012
 - Graduated *Magna Cum Laude*.
 - Received Engineering Achievement Medal (top of graduating class).

Open Source Contributions & Service

- Member of the GHC Steering Committee (2018 — Current).
- Served on the Haskell Symposium 2019 Program Committee.
- Contributed `HasCallStack`, a lightweight call-stack mechanism, to GHC.
- Contributed to macOS support in the `Nix` package manager and software distribution.

Publications

- E. L. Seidel, R. Jhala, and W. Weimer (2018). “Dynamic witnesses for static type errors (or, Ill-Typed Programs Usually Go Wrong)”. In: *J. Funct. Programming* 28
- E. L. Seidel (2017). “Data-Driven Techniques for Type Error Diagnosis”. PhD thesis. UC San Diego
- E. L. Seidel, H. Sibghat, K. Chaudhuri, W. Weimer, and R. Jhala (Oct. 2017). “Learning to Blame: Localizing Novice Type Errors with Data-driven Diagnosis”. In: *Proc. ACM Program. Lang.* 1.OOPSLA, 60:1–60:27
- E. L. Seidel, R. Jhala, and W. Weimer (2016). “Dynamic Witnesses for Static Type Errors (or, Ill-Typed Programs Usually Go Wrong)”. In: *Proceedings of the 21st ACM SIGPLAN International Conference on Functional Programming*. ICFP 2016. Nara, Japan: ACM, pp. 228–242
- T. Elliott, L. Pike, S. Winwood, P. Hickey, J. Bielman, J. Sharp, E. Seidel, and J. Launchbury (2015). “Guilt free ivory”. In: *Proceedings of the 8th ACM SIGPLAN Symposium on Haskell*. ACM, pp. 189–200
- E. L. Seidel, N. Vazou, and R. Jhala (2015). “Type Targeted Testing”. In: *Programming Languages and Systems*. Springer Berlin Heidelberg, pp. 812–836
- N. Vazou, E. L. Seidel, and R. Jhala (2014). “Liquidhaskell: Experience with refinement types in the real world”. In: *Proceedings of the 2014 ACM SIGPLAN symposium on Haskell*. ACM, pp. 39–51
- N. Vazou, E. L. Seidel, R. Jhala, D. Vytiniotis, and S. Peyton-Jones (2014). “Refinement types for haskell”. In: *Proceedings of the 19th ACM SIGPLAN international conference on Functional programming*. ACM, pp. 269–282