

Chad Scherrer

☎ (971)325-9597
✉ chad.scherrer@gmail.com

Employment

- Feb 2017– **Statistical programming consultant**, Seattle, WA.
- Implement and optimize Bayesian models for DARPA Challenge Problem.
 - Recommend code transformations for automating and generalizing optimizations.
 - *Technology*: Haskell, R, Julia, LaTeX, Spark, PyMC3, Git.
- 2014–2017 **Technical Lead**, *Galois, Inc.*, Portland, OR.
- Led probabilistic language development and publication.
 - Led technical evaluation work and client presentations.
 - Served as technical point of contact for external collaborators.
 - Mentored junior staff.
 - *Technology*: Haskell, R, Python, Julia, Scala, Clojure, Git, Subversion, LaTeX
- 2013–2014 **Lead Data Scientist**, *Melinae*, Yakima, WA (remote).
- Led work to develop a revenue forecast model still in use by a client.
 - Translated business client priorities into model specifications.
 - Planned and implemented computational infrastructure.
 - Developed a technical culture at a company with no other full-time technical staff.
 - *Technology*: R, Haskell, Julia, Stan, Git
- 2012–2013 **Statistics Consultant**, *Insight Results*, Yakima, WA (remote).
- Contributed modeling expertise to a distributed data analysis team.
 - Collaborated to integrate new models and prediction methods into data analysis workflow.
 - *Technology*: R, Stan, Git
- 2000–2012 **Research Scientist**, *Pacific Northwest National Laboratory*, Richland, WA.
- Led development of Passage, a probabilistic programming language with C/OpenMP code generation, written in Haskell.
 - Led research and development of parallel coordinate descent algorithms for sparse (ℓ_1 -regularized) classification; published in top-tier international machine learning conferences (ICML, NIPS).
 - Designed statistical models for a wide variety of domains, including radiation detection, proteomics, data compression, and network anomaly detection.
 - Designed and implemented parallel algorithms for statistical learning and other scientific applications, in a variety of languages.
 - *Technology*: Python, R, Ocaml, Matlab, Stan, C/OpenMP, Git, Subversion, LaTeX, Haskell (including parallel and sockets)

Education

- 1994–2003 **PhD, Mathematics**, *Indiana University*, Bloomington, IN.
Multivariate Circular Symmetry Models. Steen A Andersson, advisor.
- 1990–1994 **BS, Mathematics**, *Rose-Hulman Institute of Technology*, Terre Haute, IN.

Open-source Software

- *Passage*, <http://hackage.haskell.org/package/passage>
Generate C/OpenMP Gibbs sampler from high-level model specification
- *BayesianLinearRegression*, <http://github.com/cscherrer/BayesianLinearRegression.jl>
Fit Bayesian linear regression model, with marginal likelihood noise estimation
- *fastbayes*, <https://github.com/cscherrer/fastbayes>
Similar to *BayesianLinearRegression.jl*, but implemented in Haskell

Selected Publications

- Scherrer C. *An Exponential Family Basis for Probabilistic Programming*. Probabilistic Programming Semantics, Workshop at Principles of Programming Languages (POPL 2017).
- Westbrook E, C Scherrer, N Collins, and E Mertens. *GraPPa: Spanning the Expressivity vs. Efficiency Continuum*. Probabilistic Programming Semantics, Workshop at Principles of Programming Languages (POPL 2017).
- Scherrer C, I Diatchki, L Erkök, and M Sottile. *Passage: A Parallel Sampler Generator for Hierarchical Bayesian Modeling*. Probabilistic Programming: Foundations and Applications, Workshop at Neural Information Processing Systems (NIPS 2012).
- Scherrer C, A Tewari, M Halappanavar, and D Haglin. 2012. *Feature Clustering for Accelerating Parallel Coordinate Descent*. Neural Information Processing Systems (NIPS 2012).
- Scherrer C, M Halappanavar, A Tewari, and D Haglin. 2012. *Scaling Up Coordinate Descent Algorithms for Large ℓ_1 Regularization Problems*. International Conference on Machine Learning (ICML 2012).
- Jarman KD, Scherrer C, EL Smith, L Chilton, KK Anderson, JJ Ressler, and LL Trease. 2011. *Indirect Estimation of Radioactivity in Containerized Cargo*. Radiation Measurements 46 (1): 10–20.
- Goodman EL, DJ Haglin, Scherrer C, D Chavarría-Miranda, JA Mogill, and JT Feo. 2010. *Hashing Strategies for the Cray XMT*. In IEEE International Symposium on Parallel & Distributed Processing, Workshops and Phd Forum (IPDPSW 2010), pp. 1–8. Institute of Electrical and Electronics Engineers, Piscataway, NJ.
- Beagley N, C Scherrer, Y Shi, BH Clowers, WF Danielson, and AR Shah. 2009. *Increasing the Efficiency of Data Storage and Analysis using Indexed Compression*. In The 5th IEEE International Conference on E-Science.
- Pike WA, C Scherrer, and SJ Zabriskie. 2008. *Putting Security in Context: Visual Correlation of Network Activity with Real-World Information*. In VizSEC 2007: Proceedings of the Workshop on Visualization for Computer Security, ed. Goodall, J. R. and Conti, G. and Ma, K. L., pp. 203–220. Springer, Berlin, Germany.

Patent

- Scherrer C, *System and Method for Anomaly Detection*, U.S. Patent No. 7,739,082, Jun 2010.