

R. Wesley Henderson

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Education

- 2019 Ph.D. in Electrical Engineering, University of Mississippi, Dissertation: Design and Analysis of Efficient Parallel Bayesian Model Comparison Algorithms, Adviser: Prof. P.M. Goggans (expected)
- 2012 M.S. in Architectural Sciences, concentration in Architectural Acoustics, Rensselaer Polytechnic Institute, Thesis: Application of Bayesian Inference to Room-Acoustic Modal Analysis, Adviser: Prof. N. Xiang
- 2011 B.S. in Civil Engineering, Louisiana Tech University, *magna cum laude*

Publications & talks

REFEREED JOURNAL ARTICLES

- 2017 R. Wesley Henderson, Paul M. Goggans, and Lei Cao. Combined-chain nested sampling for efficient Bayesian model comparison. *Digital Signal Processing*, 70:84–93, November 2017.

TUTORIALS

- 2018 R. Wesley Henderson. Tutorial: Parallel computing approaches for model comparison. In *38th International Workshop on Bayesian Inference and Maximum Entropy Methods in Science and Engineering*, 2018.

CONFERENCE PROCEEDINGS

- 2018 R. Wesley Henderson and Paul M. Goggans. Using the Z-order curve for Bayesian model comparison. In A. Polpo, J. Stern, F. Louzada, R. Izbicki, and H. Takada, editors, *Bayesian Inference and Maximum Entropy Methods in Science and Engineering (MaxEnt 2017)*, volume 239, pages 295–304. Springer Proceedings in Mathematics & Statistics, 2018.
- 2017 R. Wesley Henderson and Paul M. Goggans. Bayesian comparison of voice coil impedance models for dynamic loudspeakers. In *Proceedings of the 36th International Workshop on Bayesian Inference and Maximum Entropy Methods in Science and Engineering (MaxEnt 2016)*, volume 1853, page 050002. AIP Publishing, 2017.
- 2014 R Wesley Henderson and Paul M Goggans. Parallelized nested sampling. In *Proceedings of the 33rd International Workshop on Bayesian Inference and Maximum Entropy Methods in Science and Engineering (MaxEnt 2013)*, volume 1636, pages 100–105. AIP Publishing, 2014.

- 2014 Paul M Goggans, Lei Cao, and R Wesley Henderson. Assigning priors for parameters constrained to a simplex region. In *Proceedings of the 33rd International Workshop on Bayesian Inference and Maximum Entropy Methods in Science and Engineering (MaxEnt 2013)*, volume 1636, pages 94–99. AIP Publishing, 2014.
- 2014 Paul M Goggans, R Wesley Henderson, and Lei Cao. Design-as-inference: Probability-based design of intermodal transportation networks. In *Proceedings of the 33rd International Workshop on Bayesian Inference and Maximum Entropy Methods in Science and Engineering (MaxEnt 2013)*, volume 1636, pages 145–150. AIP Publishing, 2014.
- 2013 Paul M. Goggans, R. Wesley Henderson, and Ning Xiang. Using nested sampling with Galilean Monte Carlo for model comparison problems in acoustics. In *Proceedings of the 21st International Congress on Acoustics*, 2013.
- 2013 Wesley Henderson, Paul Goggans, Ning Xiang, and Jonathan Botts. Bayesian inference approach to room-acoustics modal analysis. In *Proceedings of the 32nd International Workshop on Bayesian Inference and Maximum Entropy Methods in Science and Engineering (MaxEnt 2012)*, volume 1553, pages 38–45. AIP Publishing, 2013.
- 2012 R. Wesley Henderson, Jonathan Botts, and Ning Xiang. Bayesian room-acoustics modal analysis. In *Proc. the 41st International Conference on Noise Control Eng.*, 2012.
- 2012 R. Wesley Henderson, Jonathan Botts, and Ning Xiang. Evaluations of room-acoustics modal characteristics from single-point measurements using Bayesian analysis. *J. Acoust. Soc. Am.*, 132, 2012.

CONFERENCE PRESENTATIONS

- 2015 R. Wesley Henderson and Paul M. Goggans. A simple approach to parallel nested sampling. In *The 35th International Workshop on Bayesian Inference and Maximum Entropy Methods in Science and Engineering (MaxEnt 2015) at Clarkson University*, 2015.
- 2013 R. Wesley Henderson, Paul M. Goggans, and Lei Cao. Bayesian inference framework for intermodal transportation network design. In *Mid-South Annual Engineering and Sciences Conference*, 2013.
- 2013 Lei Cao, Paul M. Goggans, and R. Wesley Henderson. Demand routing for intermodal transportation networks using a design-as-inference approach. In *University Transportation Center Conference for the Southeastern Region*, 2013.

Teaching experience

- 2018 **Instructor** for Electrical Engineering Tools and Toys. Developed course calendar, lectures, and assignments.
- 2014–16 **Teaching assistant** for Electric Circuit Theory, Prof. W. E. Hutchcraft, University of Mississippi
- 2015 **Lab assistant** for Introduction to Electrical Engineering, Prof. R. Viswanathan and Prof. W. E. Hutchcraft, University of Mississippi
- 2015 **Co-instructor** with Prof. R. Gordon for Engineering Analysis I, University of Mississippi
- 2014 **Teaching assistant** for Electric Circuit Theory, Prof. P. M. Goggans, University of Mississippi
- 2014 **Teaching assistant** for Random Signals, Prof. R. Viswanathan, University of Mississippi

Research experience

- 2012–19 **Research assistant**, Department of Electrical Engineering, University of Mississippi, Prof. P. M. Gogans
- 2017–18 **Research assistant** on DeciBel Research subcontract, Department of Electrical Engineering, Prof. P. M. Gogans
- 2011–12 **Research assistant**, Graduate Program in Architectural Acoustics, Rensselaer Polytechnic Institute, Prof. N. Xiang

Honors & awards

- 2013 Joint Best Poster Award at the 33rd International Workshop on Bayesian Inference and Maximum Entropy Methods in Science and Engineering (MAXENT 2013), Canberra, Australia
- 2012 Robert Bradford Newman Student Medal, Acoustical Society of America

Areas of specialization

Bayesian Inference · Markov-chain Monte Carlo Methods · Machine Learning · Parallel Computing

Programming languages

Python · C++ · MATLAB

Service to profession

- 2017 Chaired session at 37th International Workshop on Bayesian Inference and Maximum Entropy Methods in Science and Engineering in Jarinu, Brazil
- 2013, 15–16 Reviewed articles for proceedings of International Workshop on Bayesian Inference and Maximum Entropy Methods in Science and Engineering

Society memberships

Student member of IEEE