Christopher V. Aicher

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Present Address
808 S Michigan Ave
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Education

PhD in Statistics, University of Washington. **Jan 2020**
M.S. in Applied Mathematics, University of Colorado at Boulder. **May 2014**
B.S. in Applied Mathematics, University of Colorado at Boulder. **May 2014**
Minor in Computer Science

Experience

Quantitative Researcher, Citadel Securities, **Mar 2020 - Current**

- Applying statistical/ML techinques and engineering skills to model markets, test hypotheses and develop proprietary algorithms.

Research Assistant, University of Washington, **Jan 2015 - Jan 2020**

- Worked with Professor Emily Fox to develop scalable approximate inference procedures (e.g. stochastic gradient methods) for sequential data models, such as state space models and recurrent neural networks.

Research Intern, Microsoft AI and Research, **Jun 2017 - Sept 2017**

- Worked with Consumer Data & Analytics team on short-form text clustering.
- Developed an online feature extractor using RNNs and non-parametric clustering.

Research Scientist Intern, Amazon, **Jun 2016 - Sept 2016**

- Worked with the Kindle devices demand planning team on forecasting sales.
- Tested and integrated quantile random forests to improve short-term forecasting

Machine Learning Intern, Dato (now Turi), **Jun 2015 - Sept 2015**

- Researched, developed, and shipped a new itemset mining toolkit as part of GraphLab Create's machine learning applications library.

Research Assistant, University of Colorado, **Jan 2012 - May 2014**

- Collaborated with Professor Aaron Clauset on statistical learning in networks.
- Developed a novel weighted version of the stochastic block model and variational inference algorithm for unsupervised community detection.

Selected Publications

C. Aicher, N.J. Foti and E.B. Fox, "Adaptively Truncating Backpropgation Through Time to Control Gradient Bias". *Uncertainty in Artificial Intelligence* (2019). (arxiv:1905.07473)

C. Aicher, Y.A. Ma, N.J. Foti and E.B. Fox, "Stochastic Gradient MCMC for State Space Models". *SIAM Journal on Mathematics of Data Science, To Appear.* (arxiv:1810.09098)

K. Simonen, M. Huang, **C. Aicher**, and P. Morris, "Embodied Carbon as a Proxy for the Environmental Impact of Earthquake Damage Repair". *Energy and Buildings* (2019).

C. Aicher and E.B. Fox, "Approximate Collapsed Gibbs Clustering with Expectation Propagation." *KDD* Workshop: Mining and Learning from Time Series (2016). (arxiv:1807.07621)

C. Aicher, A.Z. Jacobs and A. Clauset, "Learning Latent Block Structure in Weighted Networks." *Journal of Complex Networks* (2015). (arxiv:1404.0431)

Full publication list and code available at (https://aicherc.github.io).

Skills

Programming Languages:

- Python, R, MATLAB, C++, SQL, LaTeX,

Statistics & Computer Science Expertise:

- Stochastic Processes, Time Series, Bayesian Inference, Optimization
- Machine Learning, Algorithms, Data Structures, Database Systems, UNIX