Luke Winslow

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Core Qualifications

Highlights: Deep experience in diverse, messy dataset integration and analysis with statistical and process-based models.

Statistical Skill:

- Modeling: Statistical and process-based modeling. Model/data integration. Complex model parameter optimization through traditional and other techniques (e.g., MCMC).
- Data Manipulation: Time series, observational, and spatial data. Small to large data (~100's GBs) and scales (regional to global). Cluster computing (HTCondor, SLURM, MPI) and Apache Spark.
- Statistics: Frequentist and non-parametric analyses including time series (ARIMA, FFT, wavelet, trend), and comparative techniques (mixed-effects modeling, ANOVA, many others)
- Machine Learning: Random Forest, classification, clustering.

Computer Skill:

- Programming: experience in R (6+ years), Matlab (4+ years), Python (2+ years), Java (3+ years), JS (2+ years), SQL (3+ years), data and statistical API/tool development (multiple open-source projects, 4+ years)

Communication and Presentation:

- Written: Lead and co-author in academic publications. Technical API documentation (R-package).
- Oral: Presentation of technical results at both public outreach events and conferences

Education

- **Bachelor of Science – Materials Science & Engineering**
  University of Wisconsin – Madison | GPA 3.66/4.0

- **Masters & PhD – Limnology and Oceanography with a Computer Science Minor**
  University of Wisconsin – Madison | GPA 3.8/4.0

Professional Experience

Postdoctoral Scholar - Rensselaer Polytechnic Institute, Troy, NY   Jan 2017-present

- Lead project to build large-scale numerical lake carbon model for past and future projections, including database aggregation and processing of large input datasets and visualization/communication of results.
- Oversaw undergraduate student projects in data analysis and data tool development (e.g., *hydrolinks*: on CRAN)

Data Scientist/Research Hydrologist – U.S. Geological Survey, Middleton, WI   Sept 2014-Oct 2016

- Competitively funded (30k) and lead a team to build an R-package interface to Sciencebase.gov API
- Independently lead and built model/data integration pipeline to create three-state (WI, MN, MI) lake modelling framework (ultimately published and released large open dataset)
- Lead developer on iPhone app for field collection of data on endangered bird species (iPlover)

Other Past Activities

- Antarctic field deployments (2013, 2015, 2016). Data analysis lead on 2015 ARTEMIS robot project
- Computer/Network support, various roles (2000-2007)
- Boy Scout (Canyon Camp, Stockton, IL) camp staff member (1998-2004), Area Director (2002-2004), Eagle Scout (2001)