

# Marc Kjerland, PhD

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## Skills

- Predictive modeling
- Nonlinear and multiscale systems
- Numerical analysis
- High-performance computing
- Machine learning
- Algorithm development
- Geophysical modeling
- Scientific visualization

## Experience

- 2018 **Verisk Analytics**, *Data Scientist*, Insurance Services Office.
- Served as Project Lead on insurance analytics team of six data scientists
  - Built models for personal auto liability losses using generalized linear models
  - Improved existing model by 43% – 80% based on lift analysis
- 2017, **Univ of Illinois at Chicago**, *Postdoctoral Fellow*, Institute for Environmental  
2014–2015 Science and Policy.
- Developed non-parametric performance metrics for urban sustainability
  - Generated insights using optimization, predictive modeling, and visualization
- 2015 – 2017 **Kyoto University**, *Postdoctoral Researcher*, Disaster Prevention Research Institute.
- Developed storm surge simulations using meteorological and topographical data
  - Quantified hazard impacts of changing typhoon distributions in Pacific Ocean

## Education

- 2015 **PhD, Applied Mathematics**, *University of Illinois at Chicago*.  
Thesis: Linear response closure approximations for multiscale systems
- 2005 **B.S., Mathematics**, *University of Minnesota, Twin Cities*.

## Technical skills

Programming languages: Python, SQL, SAS, R, C/C++, Fortran, Matlab/Octave  
Natural languages: English, French, German, Japanese  
Other: Excel, L<sup>A</sup>T<sub>E</sub>X, Bash scripting, OpenMP, GitHub, QGIS

## Papers

- 2019 **Journal of Cleaner Production**, *Sustainability Assessment of Universities as Small-Scale Urban Systems: A Comparative Analysis Using Fisher Information and Data Envelopment Analysis*. Vol 212.
- 2017 **Proceedings of Coastal Dynamics 2017**, *Estimating climate change impacts on storm surge using adaptive mesh refinement*.
- 2016 **Hydrological Research Letters**, *Impact assessment of climate change on coastal hazards in Japan*. Vol 10.
- 2016 **Communications in Mathematical Sciences**, *The response of reduced models of multiscale dynamics to small external perturbations*. Vol 14, No 3.