Marc Kjerland, PhD

Chicago, IL
☎ *+1 612-443-4025*
✉ marc.kjerland@gmail.com

Skills

- Predictive modeling
- Machine learning
- Numerical simulation
- Algorithm development
- Nonlinear dynamics and chaos
- Geophysical modeling
- High-performance computing
- Data visualization

Experience

2019 – Present — **Bank of America (contractor)**, *Senior Data Scientist*, Quantitative Services.
- Delivered decision tree classifier to supplement internal labeling system
- Developing deep learning model for investment banking team
- Providing R&D support for stochastic risk models

2018 – 2019 — **Verisk Analytics**, *Data Scientist*, Insurance Services Office.
- Project Lead on insurance analytics team of six data scientists
- Improved models for personal auto liability losses by 43% – 80%

2017, 2014–2015 — **University of Illinois at Chicago**, *Postdoctoral Fellow*, Institute for Environmental Science and Policy.
- Developed non-parametric performance metrics for urban sustainability
- Published insights using linear optimization and predictive modeling

2015 – 2017 — **Kyoto University**, *Postdoctoral Researcher*, Disaster Prevention Research Inst.
- Developed storm surge simulations using meteorological and topographical data
- Quantified hazard impacts of changing typhoon distributions in Pacific Ocean

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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, SAS, C/C++, Fortran, Matlab/Octave

Python packages: pandas, numpy, scipy, scikit-learn (sklearn), matplotlib, seaborn, keras, h2o, jupyter, gdal

Natural languages: English, French, German, Japanese

Other: Excel, SQL, LaTeX, Bash, GitHub, QGIS

Research 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.*