Marc Kjerland, PhD

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

Skills

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

Experience

2019 – Present **Bank of America (contractor)**, *Senior Data Scientist*, Quantitative Services.
- Developing custom deep learning models for investment banking
- Delivered decision tree classifier for compliance team
- Provided R&D support for stochastic risk models

2018 – 2019 **Verisk Analytics**, *Data Scientist*, Insurance Analytics.
- Lead an insurance analytics project with six data scientists
- Improved models for personal auto liability by 40–80% (Gini and head-to-head)

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

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, tensorflow, h2o, jupyter, etc...

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.*