

Marc Kjerland, PhD

1212 W 21st St – Chicago, IL 60608

☎ +1 612-443-4025 • ✉ marc.kjerland@gmail.com
🌐 www.marckjerland.com

Computational scientist with experience modeling real-world high-dimensional systems, applying novel quantitative techniques to multiscale problems, and collaborating in international settings

Skills

- Nonlinear and multiscale systems
- Algorithm development
- Numerical analysis
- High-performance computing
- Scientific visualization
- Geophysical modeling
- Machine learning
- Applied linear algebra
- GIS and geospatial analysis
- Peer-reviewed publication

Research Experience

Institute for Environmental Science and Policy

University of Illinois at Chicago

Chicago, IL

2017

- Developed novel metric for sustainable performance of urban institutions
- Generated insights using data analysis and visualization methods
- Applied methodology to urban university and co-authored technical report for peer review

Disaster Prevention Research Institute

Kyoto University

Kyoto, Japan

2015 – 2017

- Developed coastal flooding simulations using meteorological and topographical data
- Quantified hazard impacts of changing typhoon distributions in northwest Pacific
- Implemented novel methods in high-performance computing for multiscale applications

Institute for Environmental Science and Policy

University of Illinois at Chicago

Chicago, IL

2014 – 2015

- Evaluated institutional performance in data-driven urban metabolism framework
- Implemented multivariate regression, non-parametric performance metrics, and trend analysis

Department of Mathematics

University of Illinois at Chicago

Chicago, IL

2010 – 2014

- Examined dynamics of multiscale systems in chaotic and periodic regimes
- Generated ensemble solutions to analyze statistical response of reduced-dimension systems

Education

PhD, Applied Mathematics

Thesis: Linear response closure approximations for multiscale systems

University of Illinois at Chicago

2015

B.S., Mathematics

Emphasis on computer science and numerical analysis

University of Minnesota, Twin Cities

2005

Technical skills

Programming languages: Python, C/C++, Fortran, Matlab/Octave

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

Natural languages: English, French, German, Japanese

Other: \LaTeX , Bash scripting, OpenMP, GitHub, QGIS, Excel, Photoshop