

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
- Machine learning
- Complex data and abstraction
- High-performance computing
- Scientific visualization
- Geophysical modeling
- Algorithm development
- Linear algebra
- GIS and geospatial analysis
- Peer-reviewed publication

Research Experience

Institute for Environmental Science and Policy

University of Illinois at Chicago

Chicago, IL

August 2017 – Sept 2017

- Evaluate institutional performance in data-driven urban metabolism framework
- Develop new applications and methodologies and write technical reports

Disaster Prevention Research Institute

Kyoto University

Kyoto, Japan

July 2015 – July 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 regression models, optimized comparison indices, 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

Natural languages: English, French, German, Japanese

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

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