Marc Kjerland, PhD

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(pronounced "chair"land)

Summary

Data Scientist / Quant with expertise in AI/ML development, model validation, and project management.

Experience

2025 – Present **Bank of America**, *Senior Project Owner (Contract)*, Global Risk Analytics
- Financial crime modeling & analytics
- Contract role with TEKsystems (onsite at BofA)

2022 – 2025 **KeyBank**, *Senior Quantitative Associate*, Model Risk Management
- Performed rigorous validation of AI/ML & predictive models
- Mitigated potential financial, reputational, and emerging risks via detail-driven monitoring & controls
- Oversaw models in fraud detection, credit & market risk, and operations
- Led junior validators, project management, and stakeholder communication
- Modeling tools/frameworks: Python (scikit-learn, xgboost, catboost), GCP

2019 – 2022 **Bank of America**, *VP (Senior AI/ML Developer)*, Global Markets
- Developed & deployed ML framework (Python) for market forecasting and reporting
- Built reinforcement learning model for hedging application; custom Keras / TensorFlow neural network and compute layers
- Developed interpretable multi-label classifier to reduce human workload in securities compliance
- Created automation library for model documentation integrating API calls and LaTeX templates
- Derived evolving PCA methodology for robust covariance matrix estimation from noisy market data
- Modeling tools/frameworks: Python (Tensor Flow, keras, scikit-learn, xgboost)

2018 – 2019 **Verisk Analytics**, *Data Scientist*
- Headed model development project with six data scientists, from data processing to model iteration to detailed documentation
- Built countrywide and state-specific pricing models with data-driven recommendations for product owners
- Delivered rigorous technical presentations to stakeholders with model improvement of 40–80%
- Modeling tools/frameworks: SAS, Python (scikit-learn, statsmodels), H2O, PySpark, R, AWS

2017, 2014–2015 **University of Illinois at Chicago**, *Postdoctoral Fellow*, Institute for Environmental Science and Policy
- Developed novel non-parametric evaluation metrics for urban sustainability

- Published research paper for methodology combining time series analysis and linear optimization

2015 – 2017 **Kyoto University**, *Postdoctoral Researcher*, Disaster Prevention Research Inst.

- Developed open-source module for large multiscale storm surge simulations using complex meteorological data
- Quantified hazard impacts of typhoon flooding in Pacific Ocean coastlines using Monte Carlo simulation

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

Computing languages: Python, SQL, SAS, C/C++, Fortran, Javascript, R

Natural languages: English, French, Japanese, German

Other: Office suite, LaTeX, Bash, Git, QGIS, JSON

Research Papers

2023 **(In progress)**, *Storm surge modeling and impact analysis for historical storms in the Caribbean*

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*