ChunHsien E. Lu ([Linkedin](#))

925 Eminence Way Bloomington, IN 47401
Phone: (405)740-3802   E-mail: chiunshiun@gmail.com

OBJECTIVE

Mathematics Ph.D. and Statistics Master with solid background in both model and data sides to provide better viewpoint on analyzing data. Looking forward to utilizing and expanding my skills to be a quantitative analyst.

EDUCATION

Indiana University, Ph.D. candidate in Mathematics (2014/8-expect 2020/12) (GPA:3.9)
M.S. in Applied Statistics (2018/8-2019/6) (GPA:3.89)
 Thesis Title: Stability analysis on quasi-geostrophic equations with generalized forcing
 Research Area: Applied Mathematics/Partial Differential Equations(PDEs), Statistics, Stochastic PDEs
University of Oklahoma, M.A. in Mathematics (2012/8-2014/5) (GPA: 4)
National Tsing Hua University, B.S and M.S. in Mathematics (2003/9-2007/6, 2007/9-2009/6) (GPA: 3 & 4)

Related Courses
Courses at Mathematics Department
  - SPDEs with Levy noise, Stochastic Calculus, Probability, Market and Asset Pricing in Discrete Time case
Courses at Statistics Department
  - Linear Models, Statistics(Nonparametric/Bayesian/Bayesian Nonparametric), Model Selection, Data Mining, Statistical Computing, Statistical Consulting

SKILLS

Financial Skills
- Monte Carlo methods, VaR & ES, Market Risk backtesting(traffic light, unconditional coverage, conditional coverage), Stationarity test, Binomial Trees, Black-Scholes/Black's model, Gaussian copula(CDS), ISDA CDS standard model

Programming Skills
- R, Python, SQL, Matlab, Mathematica

PROJECTS

[Reconstruct stochastic differential equations by sparse identification of nonlinear dynamic systems](#)
  - Sparse regressions provide ways to construct robust models.
  - We observe by simulated data that SDEs are hard to be reconstructed exactly with big white noise. Moreover, the data will be biased near absorbing states even with small white noise.
[Construct a stationary portfolio by augmented Dickey-Fuller(ADF) test and Kalman filter(KF)](#)
 - Use the concepts below to create a stationary portfolio of two Taiwanese bank stocks.
 - Understand the connection among important concepts of stationarity, mean reversion strategies and cointegration.

PUBLICATIONS

- Lu, C., Mao, Y., Wang, Q., & Yan, D. (2019). Hopf bifurcation and transition of three-dimensional wind-driven ocean circulation problem. *Journal of Differential Equations*, *267*(4), 2560-2593.
- Lu, C., Mao, Y., Sengul. T. & Wang Q. On the spectral instability and bifurcation of 2D-quasi-geostrophic potential vorticity equation, *to be appeared in Physica D: Nonlinear Phenomena*

AWARDS

- Department Fellowship at Indiana University (2015 Spring)
- Department Fellowship at University of Oklahoma (2012-2013)