**Contact information**

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University at Albany, SUNY

Department: Economics

Current status: Ph.D. candidate (fifth year)

**Reference:**

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**LI LU**

Ph.D. candidate in Economics. Fields: Applied Econometrics, Nonparametric Econometrics, Health Economics

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| Educational Background |  |

**Ph.D. in Economics** – Expected in 2023. 5 | University at Albany, State University of New York, Albany, U.S

**Master of Science in Economics** – 2016.12 | Georgia Institute of Technology, Atlanta, U.S

**Bachelor of Science in Economics & Finance** – 2013.9 | Minzu University of China, Beijing, China

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| Relative Courses & Exams |  |

**Relative courses |** University at Albany, SUNY

* Advance Macroeconomics & Microeconomics I, II
* Mathematic statistics
* Advanced Topics in Theory and Econometrics (Time Series, Nonparametric econometrics, Panel Data, Machine Learning, Causal Inference)
* Health Economics

**Exams |** University at Albany, SUNY

* Passed Ph.D. Preliminary Examination
* High Passed Econometrics Field Exam

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| Research Project |  |

**Random Coefficients Model on the US banking application (Third Year Paper, Jun. 2020-Oct. 2020)**

* Investigate general heterogeneity among US banking industry from Report of Condition and Income data (Call Report).
* Estimate random coefficients parameter of bank translog cost function & compare to fixed coefficients parameter counterpart.
* Use kernel density estimation method to analyze probability density function on returns to scale, technical change, scale effects and total factor productivity growth & compare those in two different models.
* Conclude negative marginal returns have been found & bank asset has little marginal effect on returns to scale and productivity effects.

**State space model in blue chip data (Term paper, apr. 2020-jun. 2020)**

* Investigate errors terms in a set of multi-horizon forecasts in which forecasts of the same variable are updated along the forecast horizon.
* Decompose forecast errors into three distinct sources of error, horizon specific bias, rational error and noise.
* Compute forecast equations in state-space framework by using Kalman filter to estimate the loading matrix.
* Conclude state process Variance-Covariance Matrix pattern for each corresponding sources of error.

**High Frequency data analysis (Course project, aug. 2018- oct. 2018)**

* Use SARIMA model to estimate high frequency data, such as Producer-Price-Index (PPI).
* Model selection via Akaike Information Critera (AIC) & compare forecasts from best model to actual realizations.

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| Professional Experience |  |

**Business Systems Analyst Intern |** Department of Taxation and Finance (DTF), New York State Government, Albany, New York 8/2021−Present

* Forecast the New York City (State) net migration trend based on State Tax filers
* Evaluate the short-term and long-term tax policy performance
* Induction training for new employees with Statistical Inference

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| Teaching Experience |  |

**Instructor |** University at Albany, SUNY 5/2021−7/2021

* Principle of Microeconomics (Summer 2021)

**Teaching Assistant |** University at Albany, SUNY 8/2017−5/2021

* Principle of Macroeconomics (Spring 2020 and Fall 2020)

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| Research Contest Award |  |

* Award of Successful Participant, International Mathematical Contest in Modeling (MCM)
* Honorable Mention, National University Startup Contest (Challenge Cup)
* Outstanding Award, Undergraduate Research and Training Program
* Award of Merit, Mathematic Contest in Modeling, Beijng, China

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| Scholarship |  |

* National Encouragement Scholarship, China
* University Scholarship for outstanding academic performance, MUC
* Academic Excellence Scholarship, MUC

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| Skills |  |

**Software**

* Python, R, MATLAB, Visual Basic Advance, MS Office suite, SAS, SPSS, E-view, STATA,GIS

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| Personal |  |

Team player, excellent communication skills, self-motivated, enthusiastic, and a quick learner

Hello all,

Hope this letter finds you well. My name is Li Lu. I’m a fifth year Ph.D. candidate from SUNY at Albany Economics department. Compared to empirical working on health economics, I’m more interested in methodology quantitative analysis in Health area. I would like to bring more new method to Health Economics fields. My current research fields interested in nonparametric econometrics, as well as machine learning algorithms which is model free estimation. Compared to traditional parametric setting, model misspecification would provide inconsistency estimation. Even though nonparametric estimation subject to the curse of dimensionality, we still could apply to method to large sample dataset on core assumption holds if the local sample size in each small bandwidth goes into infinity with sample size goes into infinity, such as Natality Birth Data and Mortality Death Data, also we could use dimension reduction techniques such as LASSO to regularize more parameters as L1 penalty on object function. The optimization estimation will be the trade off between bias and variance to avoid over fitting.

My future research work will be in semiparametric methodology, compare to nonparametric, semiparametric allows flexibility parametric forms in this framework such as partial linear model. Also, semiparametric method will give more economic interpretation on treatment effect such as pregnancy smoking to maternal birth outcome. The difficulty in my future research is identification on building up the new model which in semiparametric framework compared to purely nonparametric kernel estimation, which only set restrictions on infinity parameter space.

Those above method could apply to quantile regression function, which is different than traditional mean regression or treatment effects with the average. Quantile method focus on distribution rank characteristic of target variable such as maternal birth weight. This methodology will be well suited to health disparity. The high quantile of birth outcomes may present different patterns than low quantile. Many researchers now find more inequality in those fields, and my research work will combine the nonparametric and semiparametric method with quantile treatment effect analyses.

The NBER boot camp is a great opportunity for all Ph.D. students who devote themselves to this field. I believe the Research Boot Camp will provide me a great chance of absorbing more health fields knowledge, as well as social connections with participates sharing health research ideas. I will be really appreciated if I could get the chance to attend and I’m happy to meet all of you in this summer, thank you!

Best regards,

Apr. 20, 2022