Yuelin Li

Curriculum Vitae

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Research Interests

My primary research interests include numerical methods, scientific computing, and data science.

Education

May 2021 **M.A./M.P.A. Joint-Degree in Data Science and Development Practice**, *Columbia University*, New York, NY.
GPA: 3.97 (overall), 4.06 (math+cs).
Minor in Data Analytics and Quantitative Analysis (DAQA).
Recipient of SIPA fellowship $12k per semester, Earth Institute research fund $3k.
Courses: Machine Learning, Artificial Intelligence, Data Structures, Databases, Computer Science Theory, Real Analysis I&II, Computational Inverse Problems, Partial Differential Equations, Numerical Methods, Probability and Statistics.

July 2017 **B.A. in East Asian Studies and Economics**,
Peking University, Beijing, China.
Recipient of Global Korea Scholarship $5k.

Publications & Projects

Split-step balanced θ-method for stochastic differential equations under non-global Lipschitz conditions, *with Dr. Wanrong Cao and Yufen Liu*, we study the convergence and stability of an implicit numerical method for stochastic differential equations under non-global Lipschitz conditions. Numerical examples are simulated to illustrate the theoretical results.

Inefficient Control Measures and COVID-19 Second Waves, *(In preparation, to be updated in late Dec.) with Dr. Yongyue Wei, Xiao Ning, Jinxing Guan, Liangmin Wei*, we used classification models and data visualization to analyze eight types of performance of 170 countries.

Academic Experience

Reading Supervisor **Florian Johne**, *Ritt Assistant Professor at Columbia University*.
We studied the essential of partial differential equations on topics such as finite difference numerical methods for PDEs, the method of characteristics for linear and quasilinear wave equations, nonhomogeneous problems, etc.

May-Sept. 2020 **Research Assistant**, *Graduate School of Architecture, Planning and Preservation, Columbia University*, New York, NY.

- Led the data entry and verification process for New York City's 1880 census databases, cleaned more than 792,000 records in order to facilitate historical migration analysis
- Built machine learning model to test confidence score options for disambiguation, resolved dwelling data conflict with bipartite matching, run a linear regression on house number prediction
- Set up with geocoding and performed topology techniques in street address data validation using R and GIS

June 2019-May 2020 **Research Assistant**, *The Earth Institute, Columbia University*, Palisades, NY.

- Member of the Geo-referenced Infrastructure and Demographic Data for Development project
- Conducted geospatial data analysis on census data in five African countries-using GIS, Python, and R
- Validated settlement data with health agency (hospital) coverage: checked the quality of existing health agency coverage boundaries in the Democratic Republic of Congo, cleaned duplicate data using R
- Performed cost-benefit analysis, stakeholder analysis, and monitoring-evaluation (M&E) for project management, planned detailed itinerary and administered $110,000 budget for two-month data collection fieldwork

Aug. 2016-Dec. 2016 **Research Assistant**, *Snow Lab, Harvard University*, Cambridge, MA.

- Member of the Teacher Training, Job Performance, and Retention project
- Focused on investigating the causal mechanisms involved in reducing teacher turnover in beginning Early Childhood Education in a disadvantaged bilingual region
- Designed, organized and disseminated Qualtrics questionnaire on 1,785 kindergarten teachers' data
- Compiled and posted related articles and teaching plans on targeted social media for both the treatment and control groups every three days

June 2016-Aug. 2016 **Research Assistant**, *Snow Lab, Harvard University*, Cambridge, MA.

- Created and organized a database for further analysis of Word Generation program
- Transcribed 549 essays and 1,038 definitions from 4th-8th grade students into T-units and marked the grammatical errors with CLAN
- Suggested changes related to coding efficiency to professors and doctoral fellows, and participated in revision of experimental design and methodology

Work Experience

Nov. 2020-Present **Graduate Consultant-Cybersecurity**, *PwC Consulting*, New York, NY.

- Conducted research on threat hunting, threat intel sharing, and the Defense Industrial Base, drawing on structured and unstructured data and sources
- Analyzed findings, composed a report on the status quo and prospective development, and develop cyber policy recommendations

Additional Information

Programming Proficient: Python, R, SQL, Stata. Capable of: C/C++, Java, HTML.

Tools LaTeX, GIS, Linux, Tableau.

Languages English, Korean, Chinese.