WOOYONG JUNG

Postdoctoral Scholar
School of Data Science, University of Virginia
Email: wjung@virginia.edu | Homepage: https://yilmajung.github.io/ | Phone: (929) 810-7769

EDUCATION

Doctor of Philosophy in Informatics, The Pennsylvania State University — Dec 2025
- Dissertation title: "Computational Social Science: Applications to Real-World Housing Issues and Human Behavior Studies Through Data-Driven Approaches"
- Advisor: Dr. Dongwon Lee, Professor of Information Sciences and Technology

Master of Arts in Applied Quantitative Research, New York University — Aug 2020

Master of Development Policy, KDI School of Public Policy and Management — Dec 2016

Bachelor of Arts in Development Studies, University of California, Berkeley — Aug 2011

EXPERIENCE

Professional Experience

Postdoctoral Scholar, University of Virginia — Jan 2026 – Present
- Have led a project on representation engineering for large language models (LLMs), with a focus on eliciting specific persona vectors and leveraging these to guide changes in LLM responses based on vector orientations

Graduate Research Assistant at PIKE Research Group, The Pennsylvania State University — Aug 2022 – Dec 2025
- Led a project predicting public opinion changes in the U.S. using large language models (LLMs) to estimate how closely these models can simulate human behavior over time
- Implemented analysis of homelessness trends using computer vision techniques and spatiotemporal modeling to identify homeless tents from crowd-sourced street-view images and forecast future trends
- Conducted research on eviction trends using machine learning and geospatial analysis
- Completed a social media study analyzing user behavior and multiple self-presentations

Data Science Intern, The Washington Post — May 2022 – Aug 2022
- Conducted a look-alike modeling project to predict potential audiences most likely to click on specific advertisements
- Utilized Spy and Bootstrap Sampling with the AdaBoost algorithm and efficiently identified audiences who clicked on the ads more quickly

Graduate Research Assistant, New York University — Dec 2019 – Feb 2020
- Participated in a project led by Prof. Amanda Geller (https://doi.org/10.1007/s10940-020-09471-9)
- Analyzed the use of force (UOF) data in the 11 U.S. police departments to detect racial disparities during community policing
- Visualized the research results published in the final manuscript

Senior Research Associate, Korea Development Institute (KDI) — Oct 2014 – Jul 2019
- Analyzed country data (economic and social indicators) and published annual country reports
- Studied the Knowledge Sharing Program (KSP) Index quantifying project performance capability of partner countries
- Provided strategies encouraging the localization of Sustainable Development Goals (SDGs) in Korea's local governments by surveying the recognition and practices of SDGs in 15 local governments and interviewing relevant officers

Graduate Research Assistant, KDI School of Public Policy and Management — Mar 2014 – Sep 2014
- Assisted research on small and medium enterprise (SME) policies in Korea and Hungary

Program Manager (Volunteer), COPION Ethiopia   Mar 2012 – Apr 2013
- Monitored and evaluated a child education program and a sexual and reproductive health program (FGAE) in the Oromia region
- Conducted interviews with beneficiaries and assessed changes in their attitude towards reproductive health after our project
- Coordinated short-term volunteer activities in Ethiopia for college students from Korea

Teaching Experience

Graduate Teaching Assistant, The Pennsylvania State University   Aug 2021 – Dec 2025
- CYBER 451: Network Security (Fall 2025)
- IST 230: Discrete Mathematics (Spring 2025)
- IST 210: Organization of Data (Spring 2022)
- DS 200: Introduction to Data Science (Fall 2021)

PUBLICATIONS

1. **Wooyong Jung**, Sola Kim, Dongwook Kim, Maryam Tabar, and Dongwon Lee. "A New Lens on Homelessness: Daily Tent Monitoring with 311 Calls and Street Images." In *the 18th International Conference on Social Computing, Behavioral-Cultural Modeling & Prediction and Behavior Representation in Modeling and Simulation (SBP-BRiMS) 2025*.

2. **Wooyong Jung**, Maryam Tabar, and Dongwon Lee. "Hotspots of Eviction: Guiding Dual-Track Policy Intervention with Spatial Analysis." In *2024 IEEE International Conference on Big Data (BigData)*.

3. **Wooyong Jung**, Nishant Asati, Lucy Phuong Doan, Thai Le, Aiping Xiong, and Dongwon Lee. "The Strange Case of Jekyll and Hyde: Analysis of r/ToastMe and r/RoastMe Users on Reddit." In *Proceedings of the 18th International AAAI Conference on Web and Social Media (ICWSM) 2024*.

4. Maryam Tabar, **Wooyong Jung**, Amulya Yadav, Owen Wilson Chavez, Ashley Flores and Dongwon Lee. "WARNER: Weakly-Supervised Neural Network to Identify Eviction Filing Hotspots in the Absence of Court Records." In *Proceedings of the 31st ACM International Conference on Information and Knowledge Management (CIKM) 2022*.

5. Maryam Tabar, **Wooyong Jung**, Amulya Yadav, Owen Wilson Chavez, Ashley Flores and Dongwon Lee. "Forecasting the Number of Tenants At-Risk of Formal Eviction: A Machine Learning Approach to Inform Public Policy." In *Proceedings of the 31st International Joint Conference on Artificial Intelligence (IJCAI) 2022*.

6. Wonkyu Shin, **Wooyong Jung**, and Jisun Yi. 2019. "Governance Matters More than Development Constraints for Growth in Sub-Saharan African Countries." *International Development Cooperation Review* 11(2): 55-71.

7. **Wooyong Jung** and Yoon C. Cho. 2019. "Who Remains Conservative?" *Korea Observer* 50(1): 135-161.

8. Song Chang Hong, **Wooyong Jung**, and Gang I Kim. 2019. "Chapter 7. Human Capital." *KDI Research Paper, Sharing Knowledge Sharing the Future*: 264-330.

Under Review

1. **Wooyong Jung**, Sola Kim, Dongwook Kim, Andre Sihombing, Maryam Tabar, and Dongwon Lee. "From Crowdsourced Data to Policy Design: Monitoring and Forecasting Homeless Tents." Submitted to EPJ Data Science (Preprints available at https://doi.org/10.21203/rs.3.rs-7754821/v1)

CONFERENCES AND WORKSHOPS

Presenter, International Conference on Social Computing, Behavioral-Cultural Modeling & Prediction and Behavior Representation in Modeling and Simulation (SBP-BRiMS), Pittsburgh, PA, USA	Oct 2025
Presenter, IEEE International Conference on Big Data 2024, Washington, DC, USA	Dec 2024
Presenter, International AAAI Conference on Web and Social Media (ICWSM) 2024, Buffalo, NY, USA	Jun 2024
Participant, Summer Institutes in Computational Social Science (SICSS) Korea, KAIST	Jul 2023

AWARDS AND SCHOLARSHIP

Winning team (with William Paja, Matt Murtagh-White), OECD-UNHCR Datathon 2025: Harnessing Data for Forcibly Displaced and Stateless Children ▪ Project title: The UNified Model – Predicting Education Outcomes for Displaced Children in Data-Scarce Contexts	Jun 2025
IST Travel Award, Penn State University	Apr 2024, 2025
Fund for Excellence in Graduate Recruitment (FEGR) Scholarship, Penn State University	Aug 2021
Academic Excellence Scholarship (Dean's list with distinction), KDI School of Public Policy and Management	Jan 2014
Entrance Scholarship, KDI School of Public Policy and Management	Sep 2013

SKILLS

Expertise	Statistical Modeling, Machine Learning, Spatiotemporal Analysis, Bayesian Inference, LLMs, Synthetic Data Generation
Tools	Python, R, Stan, SQL
Packages & Libraries	**[Python]** PyTorch, GPyTorch, Tensorflow, SciPy, Scikit-learn, Pandas, GeoPandas, NumPy **[R]** Tidyverse (dplyr, ggplot2, tidyr, stringr, tibble), RStan

REFERENCES

Dongwon Lee, Professor
College of Information Sciences & Technology (IST), Pennsylvania State University
dongwon@psu.edu | +1-814-865-0687