PennState Center for Socially Responsible Artificial Intelligence

Seed Grant
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Predicting Number of Tenants At-Risk of Eviction in High Resolution using Social Media, E-Commerce Data, Sociological Insights, and Low-Resolution Eviction Data

- Dongwon Lee, College of Information Sciences and Technology
- Amulya Yadav, College of Information Sciences and Technology
- J. Andrew Petersen, Smeal College of Business
- Guangqing Chi, College of Agricultural Sciences

Abstract: This collaborative project between *Penn State* and two NGOs in Texas—*Texas Housers (TH*) and *Child Poverty Action Lab (CPAL)*—proposes a data-driven approach to develop a novel framework to forecast *the number of tenants at-risk of formal evictions* (i.e., the number of eviction filings) in *high resolution* (e.g., census tract level, instead of County level) across the USA. Knowing the accurate number of eviction filings in advance helps policymakers and NGO workers make well-informed eviction mitigation plans and direct resources more efficiently. However, at present, the lack of historical eviction filing data in *high resolution* from courts prevents ML models from accurately forecasting the number of tenants at-risk of formal evictions in *high resolution*, posing a great intellectual challenge. To address this challenge, we seek to validate our idea of developing deep learning models that leverage publicly available data (e.g., satellite imagery), social media and e-commerce data (e.g., Twitter, AirBnB), historical court filings in low resolution as well as sociological insights (instead of ground truth labels in high resolution). *This CSRAI seed grant will use Texas area as a test case to produce sufficient preliminary results so that we can calibrate/extend our solutions toward the entire US in the external grant submissions.* Our collaborators at two NGOs will provide relevant datasets and feedback to our solutions as domain experts, and work together for external grant submissions.