FOR IMMEDIATE RELEASE
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Press Release

Stop Child Abuse Before it Happens with New Open Source Geospatial Machine Learning Tools

Predict-Align-Prevent and Urban Spatial Analysis share an original open source geospatial machine learning framework for the prevention of child abuse and neglect.

Despite the best efforts of social workers, policy makers, public health officials, and law enforcement, child maltreatment remains one of society's most destructive and omnipresent afflictions. The consequences of maltreatment go beyond socioemotional well-being, affecting almost all aspects of a child's physical, emotional, social and economic health well into adulthood.

Predict-Align-Prevent (https://www.predict-align-prevent.org), a 501(c)(3) nonprofit, and Urban Spatial (http://urbanspatialanalysis.com) are excited to release new, open source predictive tools to help in the fight against child maltreatment. Combining spatial analytics with cutting edge machine learning techniques, this framework allows communities to explore administrative data and forecast maltreatment risk across space.

To augment these open source assets, we have also developed a set of comprehensive planning tools, empowering stakeholders to convert risk predictions into actionable intelligence to ensure education and prevention resources are targeted to communities that need them the most. Exploratory analysis can help non-technical decision makers visualize the relationship between maltreatment and measures of exposure. Risk predictions can be validated across a host of metrics including a set of custom 'algorithmic fairness' analytics.

Dr. Dyann Daley, founder and CEO of Predict-Align-Prevent (PAP), shared, "We work with state child welfare agencies to implement a novel continuous quality improvement cycle designed to prevent child abuse and neglect. Our process fuses cutting-edge machine learning with the optimization of community-based resource allocation. Through continuous improvement, we measure objective *child* outcomes to help ensure that aligned prevention resources are 'moving the needle' for kids. At scale, this innovative approach will accelerate the discovery of effective prevention solutions for vulnerable children and families."

PAP and Urban Spatial deployed the first iteration of the framework working with the Virginia Department of Social Services in the City of Richmond, which saw over 6,400 cases of child maltreatment between July 2013 and July 2017. Armed with basic GIS skills, stakeholders in Richmond can use the risk predictions to ensure maltreatment prevention efforts are well targeted. Predictions can help inform an ongoing strategy ensuring community interventions can have their intended impact.

The Richmond case study can be viewed at https://www.predict-align-prevent.org/richmond-report. All of the source code created for this project can be accessed via GitHub at https://github.com/PredictAlignPrevent/PredictingChildMaltreatment_RichmondVA and is licensed through GPL, allowing free use, distribution, and exploration.

Congress is currently considering a bill (https://www.congress.gov/bill/115th-congress/senate-bill/3039/text) to help states explore predictive modeling in the child welfare domain. One major challenge to effective modeling is the prevalent person-based approach which requires highly private, cross-agency data at the individual level. Fortunately, the only private data required for our geospatial approach are the locations of maltreatment events. This free and open source solution can be deployed at a fraction of the time, cost and privacy risk.

Dr. Ken Steif, founder of Urban Spatial explained, "Urban Spatial has spent more than a decade developing data-driven tools governments can use to make better resource allocation decisions. We believe that releasing this framework as free and open source can create real scale in the generation of evidence-based public policy and have measurable impacts on the reduction of child maltreatment."

The Predict-Align-Prevent program recently underwent an independent ethical evaluation (https://www.predict-align-prevent.org/ethical-review) by Professor Tim Dare,

who stated that he is, “satisfied that the PAP Program has the potential to deliver genuine benefits while avoiding some of the familiar risks of alternative approaches to targeting child protection services.”

PAP and Urban Spatial look forward to seeing others adopt the open source codebase to replicate this work in communities nationwide. In addition, we seek funding to develop and package the software for less technical users, along with flexible, high-quality training materials.

Two online conferences will be hosted to launch the open source community around the software and methods.

- On March 25, 2019 at 2:00 PM EDT Dr. Ken Steif of Urban Spatial will host the kick-off call
- On March 26, 2019 at 4:00 PM EDT a second web conference will be held

For meeting details, please visit https://predict-align-prevent.org/open

Predict-Align-Prevent is a Texas-based 501(c)(3) nonprofit, partnered with Urban Spatial Analysis, a Pennsylvania-based, public-policy oriented, data science consultancy. Together, they combine spatial analysis, clinical experience, econometrics, and predictive analytics to stop child maltreatment before it happens.

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