Title of your research project.
Theoretical and empirical reexamination of adolescent delinquency in the fourth industrial revolution society: With big data and artificial intelligence.

Description of research. Please provide a few sentences that explain the question and the methods employed in this research project.
The crime phenomenon of modern society is more complex and diverse than in the past. There are many ways to predict and analyze crime phenomena. The current era of the fourth industrial revolution is experiencing innovative changes as cutting-edge information and communications technology are incorporated into all areas of the economy and society; for example, artificial intelligence (AI), the Internet of Things, big data, and mobile technology. Criminologists (crime-data scientists) play a very important role in this process. They create or assemble high-quality data that can be used to train machine-learning systems, find machine-learning algorithms that are suitable for the data, and perform modeling. The discussions of politics, economy, and culture posted on social media outlets represent the opinions of the era. The method of collecting and analyzing the unstructured data from online channels, including the Social Network Service, can interpret the actual phenomenon in our society. The current study uses structured and social big data to predict crime and preemptively respond to it. The result of this study provides a detailed description of the entire research process, which consisted of gathering big data, analyzing it, and making observations to develop a crime-prediction model that uses actual big data. The study also contains an in-depth discussion of several processes: text mining, which extracts useful information from online documents; opinion mining, which analyzes the emotions contained in documents; machine learning for crime prediction; and visualization analysis. Machine learning will be applied to finally suggest a prediction model. The results of the analysis and policy implication will be discussed.

Did this project include Penn State students as researchers?
Yes

If yes to the above question, please state where it was published.
Book


Journal Articles


Han, Y., Ma, J., Bang, E., & Song, J *. (2019) “Dynamics of Bullies and Victims among South Korean Youth: A Propensity Score Stratification Analysis”, Children and Youth Services


What problem do you address with your research?
To examine how machine learning can be used to predict crime.