

ENGINEERING/TECHNOLOGY

Visual Analytics: The Emerging Technology Moving Business and Society Forward

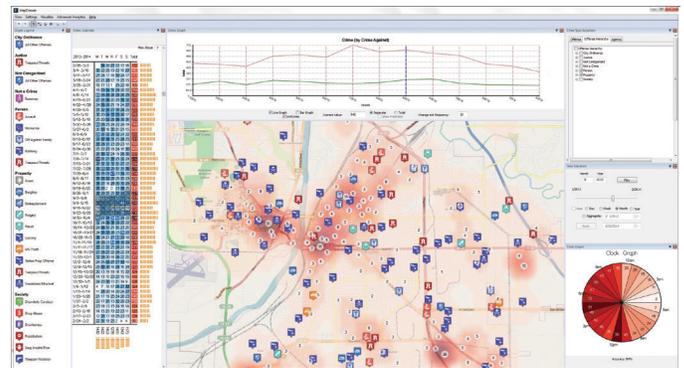
Student researcher: Justin Baghai, Senior

Visual analytics is the science of interpreting massive amounts of data and displaying this data visually. This science is used to be able to quickly identify and monitor trends that are occurring. Analytics give organizations new ways to use their data and make better decisions using insight rather than intuition. Visual Analytics for Command, Control, and Interoperability Environments (VACCINE) at Purdue has created a software called VALET, which is designed to use temporal and spatial data collected from real-time records (e.g., public crime, traffic and civil records, census datasets, and weather data) and display it on a map designed to exhibit crime hot spots and trends. It also has the ability to use complex algorithms to predict when, where, and which type of crime is most likely to occur at any given moment, providing correlations between each of the variables. Currently, the software is being used by many police departments around the country, including in a testing environment with the NYPD.

The purpose of this research was to explore the immense possibilities of being able to translate this software into many different business cases and industries. Research was conducted by analyzing many business cases and discovering ways VALET can improve their business intelligence by doing extensive company research and contacting employees of prospective partnerships. Examples of cases analyzed were transportation, real estate, and health care. Findings indicated that most all

organizations across trades are in demand for better ways to understand their business and customers. VALET has the unique capability to ingest different datasets in various formats and input channels (e.g., database sources, flat Microsoft Excel and delimited text files, and ODBC database connectors) into the system and includes predictive capabilities that are highly sought after. The results show both of these factors. Currently, work is being done to dive deeper into the different industries mentioned above to develop in-depth business cases to present to companies.

Research advisor Kaethe Beck writes, “Justin has provided a welcome perspective to the VACCINE lab over the past year. A senior in Krannert’s School of Business, Justin has been able to provide a unique perspective for a visual analytics lab, especially given his prior experience with Boeing.”



A picture of VALET, the software developed by the students working in the VACCINE lab.