Students explore immigration through a big data lens

November 2 2017

Supercomputers have helped scientists discover merging black holes and design new nanomaterials, but can they help solve society's most challenging policy issues?

At the International Conference for High Performance Computing, Networking, Storage and Analysis (also known as Supercomputing 2017 or SC17) in Denver, Colorado, from Nov. 12 to Nov. 15, undergraduate and graduate students from diverse disciplines and backgrounds will learn how to use advanced computing skills to explore the nation's immigration policies as part of the Advanced Computing for Social Change Institute (ACSCI).

The program, which debuted in 2016, teaches students how to use data analysis and visualization to identify and communicate data-driven policy solutions to pressing social issues. Organized by the Texas Advanced Computing Center (TACC), the Extreme Science and Engineering Discovery Environment (XSEDE, a National Science Foundation-funded organization) and SC17, the project is unique in its application of the world's most cutting-edge technologies to address social change.

"The institute will help students realize their leadership potential and increase their confidence in their ability to effect social change, regardless of where their profession takes them in the future," said Rosalia Gomez, TACC education and outreach manager and one of the organizers of the program.

"Our goal is to provide students with advanced computing skills and the ability to visualize complex data in a way that is useful to everyone, from those affected by immigration policy to those creating immigration policy," said Ruby Mendenhall, an associate professor of sociology at the University of Illinois and another of the organizers. "It is our hope that students will provide new knowledge about U.S. immigration that can create social change."

During the three-and-a-half-day program, students will learn computing, data analysis and visualization skills, and then form teams to tackle critical issues related to immigration. The students take a data-driven approach, analyzing large datasets to derive persuasive arguments for their positions.

"These students have so much to offer to the national conversation and debate," said Kelly Gaither, director of visualization at TACC. "Data analysis and visualization provide a vehicle to get to the truth behind the rhetoric. While this is an emotionally charged topic, we can use advanced computing tools to discern fact from fiction and use this as a platform for constructive communication to move us forward."

As part of the projects students will also receive mentorship, career development advice, and network with other advanced computing professionals. At the end of the program, the teams will present their analyses to experts in the supercomputing field.

Last year, at SC16 in Salt Lake City, Utah, students explored the Black Lives Matter movement and developed arguments advocating greater national unity and an end to police violence against people of color. The majority of student participants were from under-served communities and were first generation college students.

"The Advanced Computing for Social Change Institute aims to empower

young minds in utilizing unique software and their talents for modeling and analyzing everyday social issues irrespective of their academic major, thus effectively making predictions pertaining to the inspired model," said Stacyann Nelson, a graduate student at Florida A&M University and a part participant and current mentor in the program.

Participants in this year's event come from colleges and universities across Colorado, including the University of Colorado Boulder, the University of Denver, the Colorado School of Mines, and the University of Colorado Denver.

"I am thrilled that several computer science students from the Colorado School of Mines will be participating in this important event," said Tracy Camp, professor of Computer Science at the university. "These types of events are a win-win, as they offer an opportunity for our students to increase their skills and an opportunity for their efforts to impact the world in a positive way. The Colorado School of Mines is grateful that the event is just down the road in Denver."

Provided by University of Texas at Austin

Citation: Students explore immigration through a big data lens (2017, November 2) retrieved 26 April 2024 from https://phys.org/news/2017-11-students-explore-immigration-big-lens.html