

Students at Huntsman School of Business Analytics Solutions Center Help Map Global Migration Patterns

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In a world where human migration is reshaping economies, politics, and societies, students from the Jon M. Huntsman School of Business Analytics Solutions Center (ASC) played a key role in creating one of the clearest pictures of this global phenomenon to date. It's a project featured in *The New York Times Opinion* this week, along with an interactive tool that allows readers to explore the full dataset.

In collaboration with Meta's Social Capital Lab, ASC students helped refine the largest-ever dataset tracking permanent migration across 181 countries. Using anonymized location data from over three billion Facebook users, and focusing on individuals who moved and stayed abroad for more than a year, the project mapped human migration patterns from 2019 to 2022 with unprecedented clarity.

"This project really demonstrates why the Analytics Solutions Center is so crucial to our students and to the future of data science," said Chris Corcoran, David B. Haight Professor of Analytics and Head of the Data Analytics and Information Systems Department at Utah State University. "Through partnerships like this one with Meta, our students are gaining real-world experience solving incredibly complex, meaningful problems. They're not just building technical skills. They're learning how to think critically, answer big questions, and make a real impact."

The ASC's contribution to the migration project went far beyond basic support. Under the mentorship of Professional Practice Assistant Professor Pedram Jahangiry, students cleaned and validated vast amounts of raw data, developed machine learning models to detect anomalies in migration flows, researched the causes behind these anomalies, and helped build a dynamic visualization dashboard that will be linked to the published research.

Partnering with Meta on this project was an incredible opportunity to push the boundaries of what's possible with high-frequency migration data," Jahangiry said. "It's a perfect example of how academic-industry collaborations can create meaningful innovation.

The project, which will be published in *The Proceedings of the National Academy of Sciences*, revealed that an average of 30 million people (about one-third of a percent of the global population) permanently migrated each year during the

study period. Consistent and timely data provide policymakers and researchers with a powerful new way to understand the causes and effects of migration better.

At a time when many are questioning the value of higher education, the ASC is offering a clear answer: real-world impact. By connecting students directly with industry partners, the ASC provides hands-on experiences that build critical skills while creating economic and social value for organizations across the region, the state, and the nation.

"This project really shows why the Analytics Solutions Center is so important," said Doug Derrick, Executive Director of the ASC. "We're bridging two sides of the same coin. Giving students the chance to solve real-world problems while delivering real value to our partners. In many ways, this is the future of higher education: an apprenticeship model where students gain meaningful experience solving real problems."

For students, projects like this are a rare opportunity to lead real-world innovation. The ASC's model is deliberately student-led, with faculty mentors offering guidance and technical reviews as needed. Students drive project deliverables, meet weekly with company partners, and apply advanced skills like time series forecasting, machine learning, and data visualization to solve complex, high-impact problems. The experience not only strengthens their technical expertise but also prepares them to make a tangible difference in the world.

Mike Bailey, senior research scientist at Meta and coauthor of the research, expressed his gratitude for the ASC team's efforts.

"We're incredibly grateful to Pedram and the students at the ASC for their outstanding work," Bailey said. "The team at USU not only helped us resolve several data issues but also uncovered key insights that ultimately shaped both the editorial coverage and the research findings."

This project was no isolated effort: it marked the second of four collaborations between ASC and Meta, part of a growing portfolio that now spans 35 to 40 projects a year and touches about 10% of students in USU's Data Analytics and Information Systems department.

The success of this project shows the potential for future partnerships that connect students, faculty, and industry leaders. As technology continues to evolve, opportunities like this will play a crucial role in advancing research, solving complex problems, and preparing the next generation of those who ask the big questions.