School of Information Studies
SYRACUSE UNIVERSITY | CCDS
Center for Computational and Data Science

Center for Computational and Data Science at the School of Information Science, Syracuse University

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About the Center

The Center for Computational and Data Science (CCDS) is committed to advancing essential and practical research in the social sciences, using advanced computational approaches. The Center builds on the School of Information Science's historic strengths in Human Language Technologies, such as Natural Language Processing and Machine Learning, and the School's current emphasis on Data Science research. CCDS researchers work to advance the science of data collection, retrieval, curation, analysis, and archiving and apply those techniques to critical social problems.

The Center has three goals:

1. To answer pressing problems in the social sciences by collecting large-scale behavioral, interactional, and other data and applying data science processes and human language technologies;
2. To provide needed expertise and systems to solve pressing social problems or needs;
3. To advance the methods of large-scale data by building a community of scholars within and beyond Syracuse University focused on large-scale data research methods.

History

The CCDS started in 2015 from the Center for Natural Language Processing, which was founded by the former dean and now professor emerita Liz Liddy. The CCDS only depends on the School of Information Science and no other academic unit (the school does not have departments). Historically, the center has been funded through grants, but recently the school has taken a larger role in supporting the center given the strategic position of Data Science.

Of note is a large 11.5 million dollars grant conferred in 2017 for the multi-institutional project entitled TRACE (Trackable Reasoning and Analysis for Collaboration and Evaluation). This grant was led by former CCDS Director Professor Jennifer Stromer-Galley and awarded by the IARPA (Intelligence Advanced Research Projects Activity) agency. This project catapulted the

prominence of the center throughout the university and helped establish its current staff and resource's structure.

Structure of the Center

The School of Information Studies sees the center as a strategic part of its development and therefore funds many portions of its activities.

The center is led by co-directors Professor Jeff Stanton and Associate Professor Jeff Hemsley. The center has several staff members, including a full-time program manager, a full-time research scientist, and a full-time Research Assistant Professor.

There are ten faculty affiliated to the center, all from the School of Information Studies.

Recent accomplishments

For the last six years, the CCDS has been running a very successful project entitled The Illuminating Project (https://illuminating.ischool.syr.edu/). This project provides powerful automated analyses of political campaigns. The project harnesses the traditional strength of the center on Natural Language Processing. For example, it provides near real-time analysis of the political candidates' tweets, including civility and intended audience level. The goal of this project is to empower journalists and also the public.

Another recent project where the CCDS was able to help the University in a wide-ranging effort was the Orange Art & Architecture (https://art.grace.syr.edu/). This project is privately funded by the School of Information Science's Board member Christine Larsen, and it began with the goal of "letting the buildings speak." Christine had noticed that there were historical sites on campus that were not being displayed very well, and that people could walk right by and not take notice of a piece of SU's history. This project involves professor Jennifer Stromer-Galley, three research staff, one PhD student, one master's student, and one undergraduate student.

Challenges

- **Staff's professional development:** Offering a professional path to non-tenure-track members of the center has been challenging. For example, recently, members of the center have moved out to other positions for lack of clarity and institutional support.
- **Funding**: Many of the programs of the center depend on the indirect cost returns of grants by its affiliates. This means that affiliates must explicitly declare that they will support the center and win a grant project for the part of the funding to flow to the center's account. This funding mechanism might not be sustainable.
- **Technology commercialization:** Because of the nature of the center's activities, several useful tools and ideas with potential commercialization value have been produced. It is sometimes challenging to navigate the path to license these technologies.