

CLEMSON UNIVERSITY

College of Business and Behavioral Science

Program Planning Summary

for

Social Analytics Institute

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2. Classification –

- a) program title: Social Analytics Institute
- b) concentrations, options, and tracks: N/A
- c) designation, type, and level of degree: N/A
- d) proposed date of implementation: Already Implemented, seeking CHE approval
- e) qualifies for Palmetto Fellows Scholarship and LIFE Scholarship awards: N/A
- f) delivery mode: N/A

3. Justification of need for the proposed Center/Institute

The Social Analytics Institute (SAI) was formed by Clemson University Faculty conducting research on social technologies and analytics. Broadly defined, research projects examine issues associated with a) collecting, b) analyzing and c) visualizing very large datasets associated with the rise of social media in society and organizations. Research topics have ranged from computationally intensive processing of data to engaging in qualitative research that yields insight into how images of the South appear in popular culture. In the future, SAI seeks to advance algorithms, software, economic models, and business intelligence applications necessary for understanding social media and industry. By pursuing these projects, SAI has an opportunity to serve as a platform for funded research that shape industry's understanding of the implications of social technologies, and methods for analyzing big "social datasets".

Brief Description of the Center/Institute Activities/Research:

SAI's mission is to engage industry partners and academic members in joint research and pedagogy that accelerates our ability to understand the implications of social media for organizations. This goal will be realized through developing the following complementary strategies: (1) focused studies and projects in the core disciplines (e.g., developing tools, economic models, and business intelligence), (2) collaborative interaction with external centers when and where their efforts connect with our mission, and (3) collaborative interactions with participating academic and industry partners to ensure proper and innovative technology transfer.

Research: While industry has led the creation of social technologies, it is up to academe to develop a rich understanding of the implications of the Social Media ecosystem, which is a critical component of the IT ecosystem. Social Media refers to how users (individuals, organizations, and communities) generate content, exchange information and share ideas in public and private platforms over the Internet. Social platforms reside on a shared cyber-infrastructure owned and operated by both public and private entities. People in their personal and professional lives increasingly engage through these social platforms.

Companies such as Wordpress, Facebook, LinkedIn, Twitter, and Google+ provide platforms for creating and sharing new content and generating vast quantities of data. Companies like Amazon.com, eBay, Buy.com, Axiom, Experian, and many others are collect massive amounts of data from their (increasingly) social platforms. Similarly, in education, social platforms like those offered by the Khan Academy, Coursera and Udacity are revolutionizing the delivery of education. A less well known but critical type of platform is emerging in healthcare settings launched by companies like Qualcomm that facilitate communication between devices worn on (or in) a person with local receivers and ultimately to servers in the cloud. These technologies have the potential to dramatically address the enormous challenges in healthcare.

The new forms of interactions enabled by social media platforms coupled with the data being generated by activity on these platforms are dramatically altering consumer behavior, team collaboration, buyer-provider relationships and other forms of online behavior. The emergence of these platforms in virtually every sphere of human activity raises a range of important and challenging research questions.

1. There are questions associated with building suitable high-end applications (e.g. mobile) that leverage social platforms.
2. There are many computer science and operations research problems related to the development of appropriate analytical techniques relying on statistics, optimization, data mining, econometrics, simulation etc.
3. There is a very limited understanding of individual behaviors as well as business models that are enabled by social platforms.
4. The economics associated with the provision of cyber-infrastructure, and infrastructure more broadly, characterized by high fixed costs and close to zero marginal costs, raises many issues related to the funding of future infrastructure needs.

SAI is motivated by a unique aspect of large-scale online social networks. Networks such as Facebook and Twitter are based on a 'platform' architecture, which allows outside entities, including the research community, to build applications, interface and ultimately conduct scientific experiments using randomized trials with hundreds of millions of real-world online users in an environment where they are naturally interacting. In a business context we expect such methods to improve our understanding of consumer preferences, as well as pinpoint causal mechanisms underlying peer-to-peer influence, targeted marketing and myriad other phenomenon of interest.

Pedagogy: SAI will engage faculty, staff, and students across the School of Computing, AAH, HEHD, and CBBS to connect students' education with cutting edge research. To infuse research in undergraduate education, we will leverage campus programs such as Creative Inquiry or Eureka. Emphasis will be placed on providing an experience that will be meaningful to undergraduate students, and will promote reasoning and critical thinking skills, ethical judgment, and communication skills as well as a deep understanding of the methods of scientific and/or humanities research. Past projects have engaged student in activities such as visualizing the 2012 election, developing tools to predict exchange rates, and evaluating the relationship between online and offline behavior.

Relationship of the proposed center/institute to existing programs at the proposing institution: SAI is related to topics studied in the School of Computing, School of Education, Department of Marketing, Department of Management, Department of Communication Studies, Department of Public Health Sciences, Department of Psychology, Department of Sociology and Anthropology, and Department of Electrical and Computer Engineering.

Assessment of extent to which the proposed center/institute duplicates existing centers/institutes in the state: There are currently no Institutes with a similar focus in South Carolina.

4. Anticipated program demand and productivity:

Program Demand: SAI is a platform for drawing together rich and growing ecosystem of initiatives that support analytics focused research and learning across campus. Resources include:

1. **Social Media Listening Centers** are research and teaching facilities that allow teams multidisciplinary student and faculty teams to monitor public conversations that are accessible through social media. To ensure synergies across SMLC laboratories, SAI will coordinate activities of affiliated faculty and programs across colleges.

2. **Clemson Computing and Information Technology (CCIT)** is developing the capacity to support SAI. Currently, a kernel of support staff developed the skills, knowledge and ability necessary to support SAI affiliated faculty, technical staff and students.
3. **High Performance Computing – Palmetto Cluster** includes a “condominium” style cluster that optimizes access to computing resources for the benefit of all users.
4. **OpenFlow Network**, consisting of ten OpenFlow switches, that provides the ability to move data at 100/10 Gb/s that provide a platform for applications that require real-time analysis of large datasets.

Productivity: SAI will be assessed by its ability to a) attract an interdisciplinary group of faculty, staff, and student affiliates, b) number of applications for funding from external agencies, and c) actual number of grants funded by external public and private partners.

Currently, there is over \$400,000 in active grant and contract expenditures that associated with the Institute. SAI faculty affiliates have \$1,100,000 in grant proposals pending at funding agencies. The goal is to reach \$1,000,000 in annual funding activity associated with the Institute within a 5 year time period, then \$2,000,000 within 10 years.

(Enrollment and anticipated number of annual completions is N/A.)

5. Employment Opportunities for Graduates –

SAI-affiliated projects offer undergraduate and graduate students opportunities for research and internship. Activities associated with the institute require students to blend business, computing, and analytics skills. Student participants will acquire skills that fall under the broad rubric of Science, Technology, Engineering, and Math (STEM). According to the BLS, demand for STEM occupations will grow 13% between 2012 and 2022. Students who have an opportunity to participate in SAI projects will develop projects and papers which can be included in their portfolios.

6. Curriculum

N/A

7. Articulation and Inter-institutional Cooperation –

We look forward to collaboration with academic and industry partners. Presently, we have grants (funded or with applications pending) that support academic partnerships with University of Washington, Florida State University, Bentley College, and Virginia Tech. We are also building relationships with Wiley Corporation and Salesforce.com.

8. Total new costs associated with implementing the proposed center/institute

The annual operating budget of cost of the institute is \$300,000. The operating cost includes the personnel who organize, direct, and conduct cutting edge research in social technologies; graduate students; resources required to conduct research; and equipment and facility. Funding is drawn from current funded research, contracts, and college allocated resources. There is currently over \$400,000 in active grant and contract expenditures that could be associated with the Institute if it existed. The goal is to reach \$1,000,000 in new annual funding activity associated with the Institute within a 5 year time period, then \$2,000,000 within 10 years. As the Institute matures, we anticipate being fully funded through funded research and contracts.