About CASOS

CASOS is an interdisciplinary research center focused on making scientific advances by addressing real world problems using social, organizational and computer science techniques. It is housed at the Institute for Software Research in the School of Computer Science at Carnegie Mellon University.

Under the direction of Dr. Kathleen Carley, CASOS brings together social network analysis, machine learning, text analysis, macro -organization theory and the empirical study of complex socio-technical systems. Members in CASOS include:

- 12 PhD Students
- 11 Research Staff Members
- 3 Post Doctorate Staff Members
- 2 Admin Staff Members
- 10 Undergraduate Students
- 3 Visiting Scholars

CASOS Director

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From words

To networks

To prediction

CASOS

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2009 CASOS Faculty, Staff, and Students

Dynamic Network Analysis

CEMAP, AutoMap, ORA, Construct: Tools for Dynamic Network Analysis

CENTER FOR COMPUTATIONAL ANALYSIS OF SOCIAL AND ORGANIZATIONAL SYSTEMS

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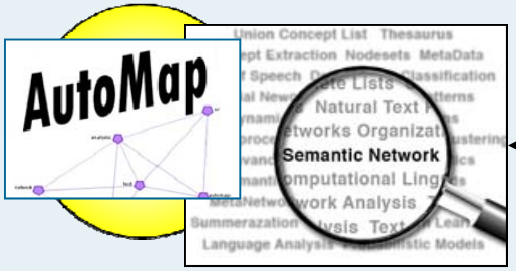
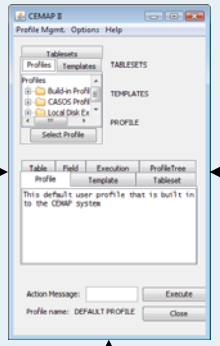


AutoMap

AutoMap is a text mining application that extracts frequency, relational, and sentiment information for concepts from textual sources such as public news articles, email corpuses, historical documents or intelligence reports. The extracted information is expressed as a hierarchy of information from the content to the semantic network to the meta-network describing what was said about people, resources, activities, areas of expertise, locations and the connections among those to the overarching sentiment.

CEMAP

CEMAP supports the auto -coding of semi-structured meta-data as network information for further analysis and information diffusion in a co-evolving social and cultural context .



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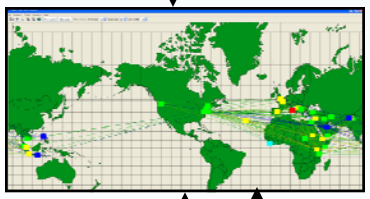
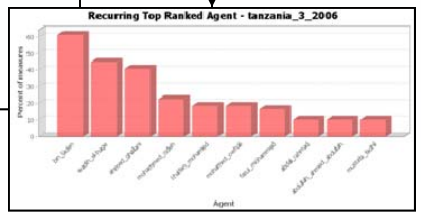
Dynamic Network Analysis

*ORA

*ORA is a dynamic network analytic toolbox that enables the visualization and assessment of multiple complex multi-level network data, with special capabilities for handling geo-spatial and temporal data. *ORA combines social network and machine learning techniques to support analysts.





*ORA includes key entity and group identification, change detection, what-if reasoning capabilities, network creation, generation, and evolution, and comparison techniques.

Construct

Construct is a multi-agent dynamic-network model of complex human socio-cultural processes. Using Construct the analyst can explore the diffusion of ideas, changes in sentiment and activities within and between groups under diverse tele-communication and cyber environments.

Interoperability

These tools can be used alone or collectively. Interoperability is made possible through the use of the DyNetML interchange language. A service oriented architecture for linking the tools also exists: SORASCS.