

Supplemental Materials for Segue: Overviewing Evolution Patterns of Egocentric Networks by Interactive Construction of Spatial Layouts

Contents

Link to Videos Demonstrating the Usage Scenarios in Section 7	P.2
Pseudocode for Transforming Time-Series into Interval Events Without Overlapping	P.3
Illustrations of the Steps in Creating the Radial Layout in Section 4.2.4	P.4
Images of Previous Prototypes	P.5
Interview Questions for the Expert Review in Section 4	P.6

Link to Videos Demonstrating the Usage Scenarios in Section 7

Latest Video

Exploring the Enron Dataset using Segue:

https://youtu.be/WD7v0_RTSZo

Older Videos

Introducing the Segue User Interface:

<https://youtu.be/diRc3IjPxRI>

Exploring the Crunchbase Coinvestment Network using Segue:

<https://youtu.be/icWG0aPiMYw>

Exploring the Enron Dataset using Segue:

<https://youtu.be/51rNkiXwQHM>

Pseudocode for Transforming Time-Series into Interval Events Without Overlapping

INPUT:

- (1) A range of slope R : (minSlope , maxSlope) specified by users,
- (2) An event category name eventCategory specified by users,
- (3) A list of time series $T_i: \{t_j\}$, each representing an ego-network
 , where T_i represents a time series with index i ,
 t_j represents a value at time step j in a time series

OUTPUT:

A list of interval events $I_k: (\text{category}_k, \text{start}_k, \text{end}_k)$
 , where category_k represents the event category to which the I_k belongs
 start_k represents the start time of I_k ,
 end_k represents the end time of I_k

FOR each time series T_i

 FOR $\text{startTime} = \text{earliest time point of } T_i \text{ to latest time point of } T_i$

 SET $\text{currentLargestEndTime}$ to NULL

 FOR $\text{endTime} = \text{startTime} + 1 \text{ to latest time point of } T_i$

 COMPUTE regression slope of T_i between startTime and endTime

 IF regression slope is within the specified range R THEN

 SET $\text{currentLargestEndTime}$ to endTime

 ENDIF

 IF $\text{endTime} = \text{latest time point of } T_i \text{ and } \text{currentLargestEndTime} \neq \text{NULL}$

 STORE interval event ($\text{start}_k, \text{end}_k, \text{eventCategory}$)

 SET startTime to endTime

 SET endTime to $\text{startTime} + 1$

 ENDIF

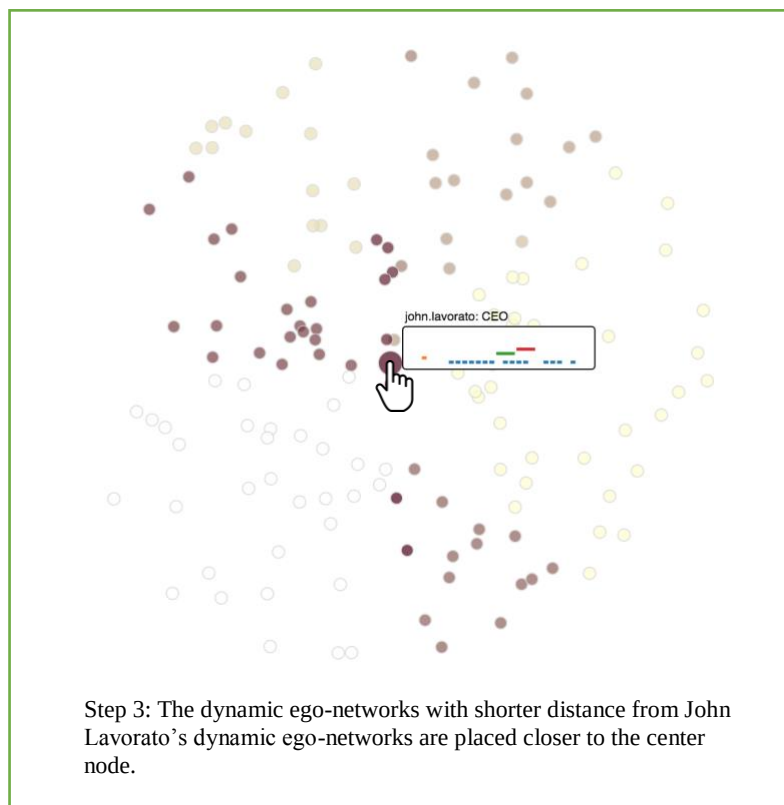
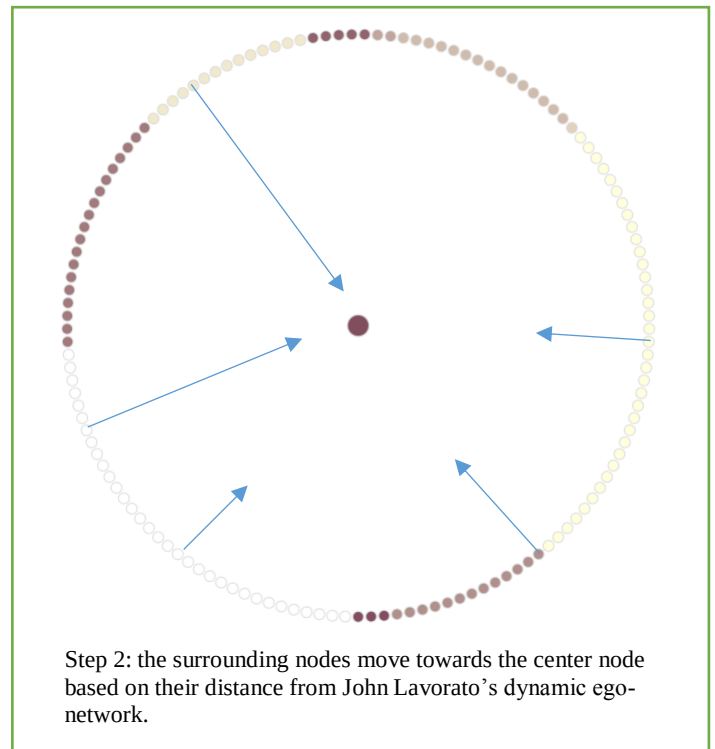
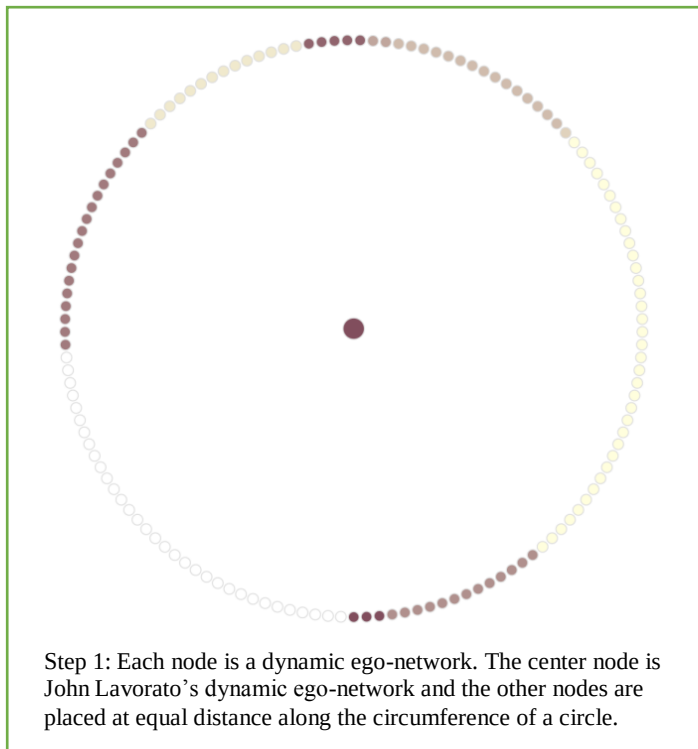
 ENDFOR

 ENDFOR

ENDFOR

Illustrations of the Steps in Creating the Radial Layout in Section 4.2.4

As described in Section 4.2.4, as analysts double-click on a node, a radial layout is created. The selected node becomes the focal node in the radial layout. The following illustrations depict the steps involved in creating a radial layout when users double-click on the node that represents John Lavorato.



Images of Previous Prototypes



Figure 1. The first prototype of Segue. (a) The ego-network view (b) The event editor (c) The table view (d) The event summary view

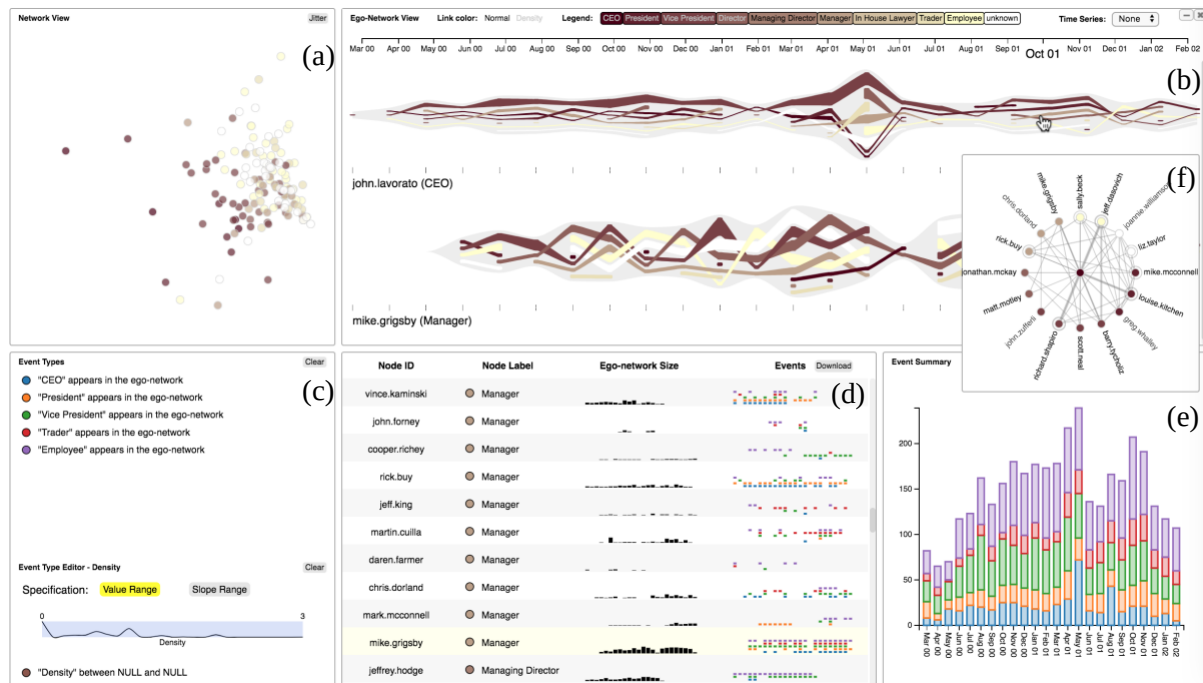


Figure 2. The second prototype of Segue. (a) The network view (b) The ego-network view (c) The event editor (d) The table view (e) The event summary view (f) A window showing the ego-network of Lavorato in Oct 01

Interview Questions for the Expert Review in Section 4

Q1	Does the tool help you explore a collection of ego-networks based on the questions you have about the data?
Q2	Do interactive event extraction and the pixel display help you explore your hypothesis about the similarities in the evolution patterns of a group of ego-networks and the differences in evolution patterns of different groups? How?
Q3	Does the ego-network similarity column help you understand in what way two ego-networks are similar and why an ego-network is an outlier? How?
Q4	Does the event summary view help you understand population level trends of the whole collection of ego-networks? How?
Q5	Please let us know if you have any further feedback.