Elbirt Technologies Software Suite - The Next Generation in Network Data Visualization, Sonification and Analysis

Abstract: The presentation will provide an introduction to ET-V 1.0, the latest software released by Benjamin Elbirt / Elbirt Technologies. ET-V 1.0 is a visualization, animation and sonification application for understanding network data in multidimensional space. It is a successor to the Jacob's Ladder (Elbirt, 2005 & 2009a & 2009b) software line. The software has been rebuilt to use XLS and XLSX files (Microsoft Excel) and includes many new features that improve the overall display and performance. This application is only limited by available resources (memory/CPU/GPU) for the data volume.

M2C 4.0 is provided for conversion of data to coordinate systems. M2C 4.0 is the latest Matrix to Coordinates conversion program that uses the latest MDSJ (Brandes & Pich, 2007) and a customized Procrustes rotation algorithm for longitudinal analysis. Inputs include pairs or matrix, text delimited or XLS/XLSX files. Outputs are in XLSX files and include various calculations and formats including ET-V.

The presentation will begin with a brief description and discussion of the M2C application and how the data is converted from relational pairs, matrixes and other formats into a coordinate system of equivalences. This will be followed by a brief tour of ET-V, the data visualization program. Finally, three data sets will be loaded and displayed using various ET-V functionality. These data sets are 1) Migration Patterns among Canadian Provinces (Barnett & Sung, 2003) (73 time points, animated and intonated); 2) US Senate Bill Co-sponsorship (Fowler, 2006) (Fowler, Co-sponsorship Network Data Page, 2010) (17 time points, animated); and 3) Sunbelt Conference Co-authorship networks (Elbirt, 2010) (10 time points, animated).

Bio: Benjamin Elbirt is a software engineer who has developed internet and desktop applications for more than 12 years. He received his master's degree from SUNY Buffalo under Dr. George Barnett, Dr. Joseph Woelfel and Dr. Frank Tutzauer in 2008. Benjamin is currently employed as the Chief Information Officer of INSNA – the International Network for Social Network Analysis. Areas of interest include Matrix Mathematics, Semantic Text Analysis, Data Visualization and Intonation, Longitudinal/Time Series data, Data Collection, Cognitive Modeling, Agent Based Modeling and Social Network Analysis. More information on software and publications can be found at his website http://www.elbirttechnologies.com.

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