

# UNIVERSITY OF SOUTH FLORIDA

## Defense of a Doctoral Dissertation

Constructing Frameworks for Task-Optimized Visualizations

by

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Visualization is crucial in today's data-driven world to augment and enhance human understanding and decision-making. Effective visualizations must support accuracy in visual task-This dissertation describes experiments, techniques, user studies to mo visualization design optimization and data transformation for low level through a taxonomized state-of-the-art survey on perception-based visu is task-dependent. With a specific focus on the scatterplot, I develop optimization. In addition to design guidelines from the first experiment