Computer Science
Seminar

As We Are: Detecting and Mitigating Human Bias in Visual Analytics

Emily Wall
Georgia Tech

Abstract: Visual Analytics combines the complementary strengths of humans (perception and sensemaking capabilities) and machines (fast and accurate information processing). However, people are susceptible to inherent limitations and biases, including cognitive biases (e.g., anchoring bias), social biases borne of cultural stereotypes and prejudices (e.g., gender bias), and perceptual biases (e.g., illusions). These biases can impact decision making in critical ways, leading to inaccurate or inefficient choices, or even propagating long-standing institutional and systemic biases.

Given our knowledge of these biases and the increased use of data visualization for decision making, the goal of this research is to detect and mitigate human biases in visual data analysis. In this talk, I describe (1) which types of bias are particularly relevant in the process of visual data analysis, (2) how user interactions with data can be used to approximate human biases, and (3) how visualization systems can be designed to increase user awareness of potentially unconscious or implicit biases. By creating systems that promote real-time awareness of bias, people can reflect on their behavior and decision making and ultimately engage in a less-biased decision making process.

Bio: Emily Wall is a Computer Science PhD candidate in the School of Interactive Computing at Georgia Tech, where she is advised by Dr.Alex Endert. Her research interests lie at the intersection of cognitive science and data visualization. Particularly, her research has focused on increasing awareness of unconscious and implicit human biases through the design and evaluation of (1) computational approaches to quantify bias from user interaction and (2) interfaces to support visual data analysis. Her research has been supported by NSF and Pacific Northwest National Laboratory. She has been awarded fellowships including Siemens FutureMaker Fellowship, Graduate Fellowship for STEM Diversity, and GA Tech GVU Foley Scholarship, among others.

Wednesday, February 19, 2020, 11:30 am
Atwood 215

Computer Science
Emory University