Interactive Visual Analysis at Scale: From Data to Actionable Insights

Friday, 1/31/20 | 11-12pm | West Hall, W105

Speaker: Dr. Fabio Miranda,
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Abstract:
Over the past decade, technological innovations have produced a wealth of large and complex data sets on almost every aspect of human life, from natural science to business and social science. The analysis of this data is usually an exploratory process in which domain expertise plays an important role. It is, therefore, essential to integrate the user into the analysis loop, enabling them to formulate hypotheses and gain actionable insights into domain-specific problems. Interactive visualization is central in the support of this process, but the scale and complexity of the data present several challenges. My research focuses on proposing new methods and systems that allow for the interactive visual analysis of large data of different types, such as time-series, spatio-temporal, and image data. By combining visualization, data management, and computer graphics my work tackles fundamental challenges in data science, enabling effective analysis of large data to untangle real-world problems. In this talk, I will present my most recent contributions in the interactive visual analysis and exploration of large urban data, motivated by problems such as urban noise, accessibility, and shadow impact on public spaces. The techniques and tools have been used by different domain experts, including urban planners, architects, and occupational therapists, allowing them to engage in data-driven science.

Biography:
Fabio Miranda is a postdoctoral research associate at New York University. He received his PhD from New York University in 2018, advised by Professor Claudio T. Silva. His research proposes new techniques that allow for the interactive visual analysis of large-scale data. He has worked closely with domain experts from different fields, from urban planning to occupational therapy, and the outcome of these collaborations includes not only research published in leading visualization, database, HCI, and AI venues, but also systems that were made available to experts in academia, industry, and government agencies. His work has also received extensive coverage from different media outlets, including The New York Times, The Economist, Architectural Digest, Curbed, among others.