A Knights Welcome To: Minsuk Kahng

UCF

Date: Friday March 22, 2019

Time: 4:00pm-5:00pm

Location: HEC-101A

(Harris Engineering Building)

Bio: Minsuk Kahng is a Ph.D. Candidate in Computer Science at Georgia Tech. His research focuses on building visual analytics tools for exploring, interpreting, and interacting with complex machine learning systems and large datasets. He publishes at premier venues spanning data visualization, data mining, databases, machine learning, and human-computer interaction. His research led to deployed and patent-pending technologies by Facebook (ActiVis, MLCube), and an open-sourced education tool for deep learning with Google Brain (GAN Lab; used by over 300,000 people from 135 countries). He received his Master's and Bachelor's degrees from Seoul National University in South Korea. He was named Graduate Teaching Assistant of the Year in Computer Science at Georgia Tech. He has been supported by a Google PhD Fellowship and an NSF Graduate Research Fellowship.
Homepage: https://minsuk.com

"Human-Centered AI through Scalable Visual Data Analytics"

While artificial intelligence (AI) has led to major breakthroughs in many domains, understanding machine learning models remains a fundamental challenge. They are often used as "black boxes," which could be detrimental. How can we help people understand complex machine learning models, so that they can learn them more easily and use them more effectively?

In this talk, I present my research that makes AI more accessible and interpretable, through a novel human-centered approach, by creating novel data visualization tools that are scalable, interactive, and easy to learn and to use. I present my work in two interrelated topics. (1) Interactive Understanding of Complex Models: I show how visualization helps novices interactively learn complex concepts of deep learning models. I describe how I developed GAN Lab, a visual education system for Generative Adversarial Networks (GANs), one of the most popular, but hard-to-understand models. GAN Lab has been open-sourced in collaboration with Google Brain and used by over 300,000 people from 135 countries. (2) Visualization for Industry-scale Models: I present how to scale up interactive visualization tools for industry-scale deep learning models that use large datasets. I describe how the ActiVis system helps Facebook data scientists interpret deep neural network models by visually exploring activation flows. ActiVis is patent-pending, and has been deployed on Facebook's ML platform. I conclude with my vision to make AI more human-centered, to stimulate a stronger ethical AI workforce, promote actionability for AI, and foster healthy impacts of AI on broader society.

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