

**Speaker:** [Nipun Batra](#)

Venue: KD101

Time: 9th April (Monday) at 11:00 AM

**Title:** The Billion Buildings Challenge

**Abstract**

Buildings contribute roughly one-thirds of the total energy consumption. Energy breakdown - providing energy consumption at a per-appliance level can help occupants save up to 15% energy. In this talk, I will propose the building billion challenge - providing an energy breakdown to a billion buildings. Previous approaches required sensor hardware to be installed in each home and thus do not scale well. Towards the challenge, I will present my approach called collaborative sensing which provides an energy breakdown without installing any additional sensors. The key intuition is that the energy consumption variation across buildings can be represented via a low dimensional representation. Our approach leverages transfer learning techniques to scale energy breakdown to regions with none to low instrumentation. Finally, I will talk about providing actionable insights based on the energy breakdown data, and about making energy breakdown research comparable.

**Bio**

Nipun Batra is a CS postdoc at the University of Virginia. Previously, he completed his PhD from IIT Delhi and his bachelors from Delhi College of Engineering. His work has received various awards such as best doctoral consortium presentation at SenSys 2015, best demo award at Buildsys 2014, finalist in the UChicago Urban Indian challenge, among others. He recently served as the TPC chair of the NILM 2018 workshop