Stanford

Andrew Sonta

Ph.D. Student in Civil and Environmental Engineering, admitted Spring 2017

Bio

BIO

I am a PhD Candidate in the Department of Civil & Environmental Engineering working with Professor Rishee Jain in the Urban Informatics Lab. My research focuses on modeling the interaction between human and built systems through data-driven methods, with the goal of improving urban environmental performance and human well-being.

HONORS AND AWARDS

- Stanford Graduate Fellowship, Stanford University (2015-2019)
- Civil Engineering Senior Award, Northwestern University (2015)
- Tau Beta Pi (elected junior year), Northwestern University (2014)

EDUCATION AND CERTIFICATIONS

- MS, Stanford University , Civil Engineering (2017)
- BS, Northwestern University , Civil Engineering, summa cum laude (2015)

LINKS

- Urban Informatics Lab: http://www.uil.stanford.edu
- http://www.andrewsonta.com: http://www.andrewsonta.com

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

I study the relationship between humans and the built environment. Using data from distributed sensors and other sources, I create models of human behavior in buildings and cities. By describing human activities and networks of relationships among people, my research aims to inform better design and management of urban systems in order to co-optimize human goals (e.g., productivity) along with environmental and social performance of built systems (e.g., energy efficiency).

LAB AFFILIATIONS

- Rishee Jain, Urban Informatics Lab (9/1/2016)

Publications

PUBLICATIONS

- **Optimizing Neighborhood-Scale Walkability**
  Sonta, A. J., Jain, R. K., Cho, Y. K., Leite, F., Behzadan, A., Wang, C.

AMER SOC CIVIL ENGINEERS.2019: 454–61

- **Understanding building occupant activities at scale: An integrated knowledge-based and data-driven approach**
  Sonta, A. J., Simmons, P. E., Jain, R. K.
  ELSEVIER SCI LTD.2018: 1–13

- **Effect of Grain Crushing and Grain Size on the Evolution of Water Retention Curves**
  Zhang, Y. D., Park, J. S., Gao, S., Sonta, A., Horin, B., Buscarnera, G., Hoyos, L. R., McCartney, J. S., Houston, S. L., Likos, W. J.
  AMER SOC CIVIL ENGINEERS.2018: 268–78

- **Inferring Occupant Ties Automated Inference of Occupant Network Structure in Commercial Buildings**
  Sonta, A. J., Jain, R. K., Ramachandran, G. S., Batra, N.
  ASSOC COMPUTING MACHINERY.2018: 126–29

- **OESPG: Computational Framework for Multidimensional Analysis of Occupant Energy Use Data in Commercial Buildings** *JOURNAL OF COMPUTING IN CIVIL ENGINEERING*
  Sonta, A. J., Jain, R. K., Gulbinas, R., Moura, J. M., Taylor, J. E.
  2017; 31 (4)

- **Towards Automated Inference of Occupant Behavioral Dynamics Using Plug-Load Energy Data**
  Sonta, A. J., Simmons, P. E., Jain, R. K., Lin, K. Y., ElGohary, N., Tang, P.
  AMER SOC CIVIL ENGINEERS.2017: 290–97

- **Evolution of the Water Retention Characteristics of Granular Materials Subjected to Grain Crushing** *JOURNAL OF GEOTECHNICAL AND GEOENVIRONMENTAL ENGINEERING*
  Gao, S., Da Zhang, Y., Sonta, A., Buscarnera, G.
  2016; 142 (9)