Andrew Sonta

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RESEARCH INTERESTS

Building energy efficiency, building occupant behavior modeling, network analysis, urban sustainability, walkability

EDUCATION

Stanford University, Stanford, CA
Ph.D., Department of Civil & Environmental Engineering, expected Spring 2020
Advisor: Rishee Jain
Committee: Michael Lepech, Martin Fischer

Stanford University, Stanford, CA
M.S., Civil Engineering, 2017

Northwestern University, Evanston, IL
B.S., Civil Engineering, *summa cum laude*, 2015
Minor: Economics
Certificates: Architectural Engineering & Design, Sustainability & Energy

JOURNAL ARTICLES

1. A. J. Sonta, P. E. Simmons, and R. K. Jain, "Understanding building occupant activities at scale: An integrated knowledge-based and data-driven approach," *Advanced Engineering Informatics*, vol. 37, pp. 1–13, 2018
2. A. J. Sonta, R. K. Jain, R. Gulbinas, J. M. F. Moura, and J. E. Taylor, "OE-SPG: Computational Framework for Multidimensional Analysis of Occupant Energy Use Data in Commercial Buildings," *Journal of Computing in Civil Engineering*, vol. 31, p. 04017017, jul 2017
3. S. Gao, Y. Y. D. Zhang, A. J. Sonta, and G. Buscarnera, "Evolution of the Water Retention Characteristics of Granular Materials Subjected to Grain Crushing," *Journal of Geotechnical and Geoenvironmental Engineering*, vol. 142, sep 2016

CONFERENCE PAPERS

1. A. J. Sonta and R. K. Jain, "Inferring occupant ties: Automated inference of occupant network structure in commercial buildings," in *Proceedings of the 5th Conference on Systems for Built Environments*, (Shenzhen, China), pp. 126–129, ACM, 2018
2. Y. D. Zhang, J. S. Park, S. Gao, A. J. Sonta, B. Horin, and G. Buscarnera, "Effect of Grain Crushing and Grain Size on the Evolution of Water Retention Curves," in *PanAm Unsaturated Soils 2017*, (Dallas, TX), pp. 268–278, American Society of Civil Engineers, nov 2018
3. A. J. Sonta, P. E. Simmons, and R. K. Jain, "Towards automated inference of occupant behavioral dynamics using plug-load energy data," in *Congress on Computing in Civil Engineering, Proceedings*, (Seattle, WA), pp. 290–297, American Society of Civil Engineers, jun 2017

TEACHING

Hard Earth Speaker Series 2017–2018
Talks by Graduate Students Exploring Tough Environmental Agendas
Course Developer and Facilitator (6 terms)

Network Analysis for Urban Systems 2017–2018
Guest Lecturer (Spring 2018)
Teaching Assistant (Spring 2017)

Stanford Splash: Designing Cities of the Future 2017–2018
2-hour class for high school students focused on data-driven urban systems analysis
Course Developer and Instructor

TALKS

5th ACM International Conference on Systems for Built Environments (BuildSys) 2018
Shenzhen, China

The 4th International Symposium on Occupant Behaviour (OB-18) and 1st Expert's Meeting of the IEA-EBC Annex 79 2018
Ottawa, Ontario, Canada

Global Climate and Energy Project and Precourt Institute for Energy Student Lecture Series 2018
Stanford, CA

International Workshop on Computing in Civil Engineering (IWCCE) 2017
Seattle, WA

San Francisco Department of the Environment 2017
San Francisco, CA

EXPERIENCE

Stanford Graduate Fellowship 2015–present
Stanford University, Urban Informatics Lab
Conducting research on modeling occupant behavior in buildings, understanding network structure of building occupants, and improving building energy efficiency.

National Science Foundation Research Experience for Undergraduates 2014
Northwestern University
Contributed to lab experiments and computational modeling of the mechanics of saturated soils.

Wanxiang Fellowship 2013
Northwestern University; Peking University; Wanxiang Polytechnic Institute
Fellowship focused on renewable energy technology and policy in China.

LEADERSHIP

Sustainable Design & Construction Leadership Committee 2015–2016
Stanford University
Treasurer and Golf Tournament Chair

Northwestern University Dance Marathon 2014–2015
Northwestern University
Executive Committee — Productions Chair

HONORS & AWARDS

- Woods Institute Rising Environmental Leaders Program — 2017–2018
  Stanford University
- Norman Foster Fellow — Digital X Workshop — 2018
  Norman Foster Foundation
- Stanford Graduate Fellowship — 2015
  Stanford University
- Civil Engineering Senior Award — 2015
  Northwestern University
- Tau Beta Pi (elected as junior) — 2014
  Northwestern University

TECHNOLOGY SKILLS

Programming Languages: Python, R, MatLab, C++, Java
Architecture & Construction: Revit/Dynamo, Rhino/Grasshopper, AutoCad
Illustration & Design: Adobe Illustrator/InDesign/Photoshop