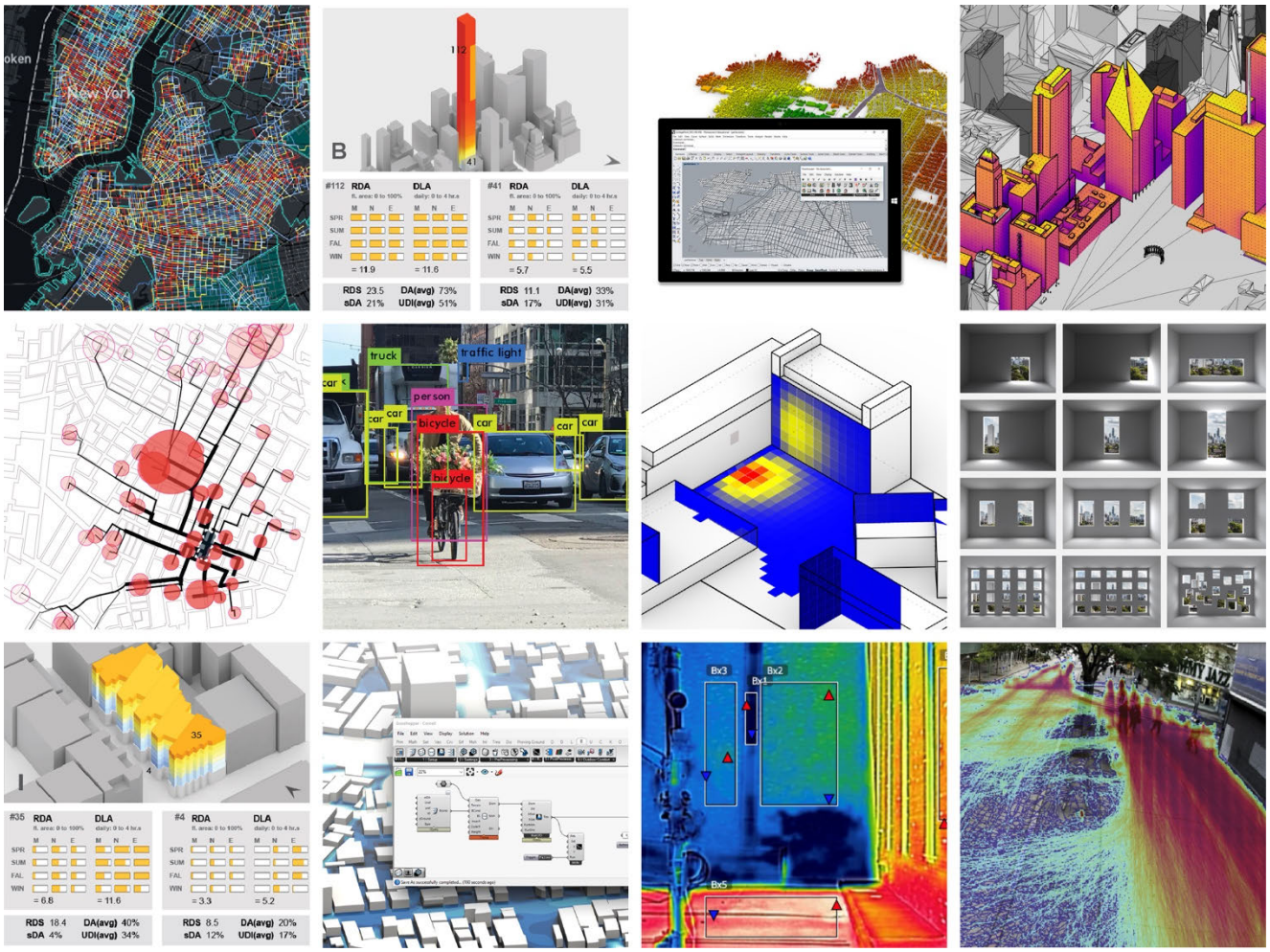

Arch 4509/6509 -- OL M 9:05 –11:00AM.
Instructor: T. Dogan. Lab Personnel: Y. Yang, P. Kastner

ES LAB Research Seminar

Developing Computational Tools for Augmented Intelligence in Design

Climate change and urbanization require us to rethink how we design our built environment. In this context, there is an emerging need for new tools that enable modes of data-driven discovery addressing fundamental questions at the frontiers and intersections of science, engineering, architecture, and urban design.

In this course, students are challenged to envision and develop new tools for augmented intelligence in design that explore the integration of complex phenomena related to sustainability in architecture and urban design (buildings, public space, mobility systems), human wellbeing, and comfort and quality of space. The course blends seminar and workshop formats and hosts a series of guests from academia and industry (KPF, SidewalkLabs, and more) for input lectures and reviews. Throughout the semester, students will be exposed to a rigorous technical research methodology and a design approach that emphasizes evidence, testing, and evaluation using computational methods. Students will learn how to frame a research question and develop an actionable contribution to our field that aims to provide new and significant insight during the design process. The research outcomes will be validated in a demonstrator case study and summarized in a technical research report. Select project groups will be invited to submit their work to peer-reviewed conferences or journals for publication. The research projects will be carried out in small groups and should be understood as a semester-long investigation.