VALSE visual analytics large scale ethnography

4204, 5204 History electives

Architecture User Interface
Architecture as a transformed and emergent medium

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with
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Contemporary architects have become enamored of the theoretical and design possibilities of computational methods and thinking, usually focused on material engineering. But the current research focus within computer science has shifted toward human computer interaction using psychological and ethnographic methods and understandings. It is not clear to what extent architecture and computer science share a common set of assumptions and goals. How can architects contribute substantially to the wider digital environment?

To bridge this gap, Architecture User Interface is a new paradigm that integrates methods and objectives from architecture, ethnography and human computer interaction. To understand the possibilities for collaboration requires an investigation of Intersecting contemporary theories and practices of the three disciplines. For more than a century, architects have been fascinated by advanced technologies beginning with machine design and ranging to the current focus on computation. Current research in computer science exemplified by ubiquitous computing, the internet of things, augmented reality and smart buildings has extended computation into physical, spatial and social settings, that is to say into architecture. Current work in both fields require ethnography; architecture because of its necessary (if sometimes unstudied) connection to human occupation and HCI because of the need to understand the experience and meaning of the settings in which they design.

This book examines architectural theory regarding digital and computational processes, the incorporation of digital technologies in architectural practice, the uses and shortcomings of ethnography in HCI and architecture, the development of the theoretical basis of computer science since its founding in the 1960's, and the emergence of interpretive ethnography.

An Architectural User Interface requires a thick description of the cultural setting, an interactive framework focused on location & motion and architecture as a medium.

Research Objectives
1. Introduction:
   The concepts of meaning, affordance, and interaction.
2. Digital Theory in architecture
   A survey of the development of digital theory related to architecture.
3. J J Gibson ecological perception.
   An introduction to the idea of ecological perception that positions the physical and spatial setting as fundamental to how architecture can be understood.
4. Emergence of HCI theory ubiquitous computing, the internet of things, augmented reality and smart building
   An analysis of the development of HCI theory as the central concern of computer science.
5. Use of digital media in architectural Design Case Studies
   Case studies of the integration of digital media in architectural settings.
6. Location, motion,
   The primary importance of position and movement as the affordance of architecture.
7. Augmented Reality
   The use of AR as a method to combine location and meaning.
8. Computer Vision
   The use of CV as a method to combine location and meaning.
9. Interpretive ethnography
   An introduction to the concept of interpretive ethnography and its implications for how the goals of architecture can be organized and scaled.
10. Architectural User Interface
    A conclusion that combines the ideas of interpretation, spatial interaction though location, and architecture as a medium.

Method
- This course is a research, reading and writing intensive seminar. We begin with a review and analysis of the Authors previous book "Social Media and the Contemporary City"
- Then we anticipate conducting "thick" ethnographic studies within the SoA.
- We will then turn to our new research initiative, "Architecture User Interface. "Each student or group of students will be assigned one objective, and will develop an extensive bibliography, complete a careful reading of the literature and write a preliminary analysis of how it fits into the broader theme of the book.

Evaluation
Your grade will be based on the depth of your "thick" ethnographic study, the thorough of the analysis, of your research objective, the completeness and depth of your annotated bibliography of 25-50 references and the quality of your approximate 30 page written document describing the objectives role in the broader issue of architecture as a transformed media.