- **Class:**
  - **Dissertation Project Working Context Manager**
    - The power of tangible interaction resides in its potential to support cognition and interaction with digital information. This research project explores how tangible interaction may support information workers in how they manage their unique and multiple projects on their personal computers. Using a "research-through-design" approach, I've developed "Working Context Manager" (WCM). The system consists of a reader, RFID cards, and a desktop application that provides explicit representations of information workers' project work states (i.e, the specific set of documents, webpages, and applications at a given time). Using WCM, I evaluate how such a system can support information workers to maintain awareness of their projects and understand what this may suggest for the future of tangible user interfaces.
    - **A link to the project site and demo can be found here:**
      - Link
    - The work described here, is the subject of my Doctoral dissertation and is subject to ongoing study. The work was based off work that was started across two classes(*VIZA 689 - Embodied Interaction* and *CSCE 655 - Human Centered Computing*). For more information on this project, please review my conference paper (also included in the directory):
      - Okundaye, O., Quek, F., Sargunam, S. P., Suhail, M., & Das, R. (2017, May). Facilitating context switching through tangible artifacts. In Proceedings of the 2017 CHI Conference Extended Abstracts on Human Factors in Computing Systems (pp. 1940-1946).
    - This work was supported by the NSF Grant, Device and Display Ecologies Award# 1439614).
  - **Working Context Manager Demo Content**
    - **Demo Description**
      - Working Context Manager (WCM) is a lightweight Mac OS-X application that enables users to create unique contexts of their project work based on the unique set of applications, web pages, and documents that represent it. Users create contexts that save their state and allow them to return to them as identified “contexts” within the application. To further support the link between the digital components of a context and physical components (paper notes, books, documents), users can use a NFC-RFID card to represent a given context, giving the context a physical form that can be embedded in existing physical objects or be written on.

- **Language**
  - Desktop Application: Swift
  - RFID Reader Device: C
- **Operation**
  - **Desktop Application:**
    - The desktop application demo is included in the folder (*Demo/Work Context Manager_10.10.13)* and is available in the project site listed above.
  - **Card Reader:**
    - The card reader is a 3D-printed enclosure with an embedded Arduino UNO and NFC RFID reader. You can take the code (in Arduino usage, this is known as a sketch) included in *Arduino_Code/readMifare_WSDM_vers_w_LED_2020* and upload it into an Arduino UNO. Next, you can wire the Arduino UNO to the NFC RFID reader as noted in the code. If a 3D printed enclosure is desired, the original ".stl" files and CURA 3D printer slicer profile is provided for reproduction.
    - **Parts for the card reader can be purchased from the following links:**
      - **Card Reader**
        - Link
      - **Cards**
        - Link
      - **Arduino UNO**
        - Link
      - **RGB LED**
        - Link
      - **Jumper Wire**
        - Link
      - **Protoboard**
        - Link