Papiercraft: A Gesture-based Command System for Interactive Paper. Liao, et al. TOCHI. 2008.

What are the core research questions addressed by the work?

- Support users in manipulating digital documents using paper printouts as proxies
- How can webs of digital connections enhance engagement with physical media?

What motivates the work?

- Addressing the issue of an existing gap between the physical (paper) world and the digital world
- Difficulty of maintaining cohesion has 'web' of interrelated documents grows

How does the work understand the usage, capabilities, and limitations of paper?

- Paper persists as an integral component of active reading and other knowledge-worker tasks because it provides ease of use unmatched by digital alternatives
- Capabilities of paper: light to carry, easy to annotate, rapid to navigate, flexible to manipulate, robust to use in various environments
- Interactions with paper documents create rich webs of annotation, cross reference, and spatial organization
    - Resulting webs confined to physical world of paper and as they accumulate become increasingly difficult to store, search, and access

What is the target application domain of the work?

- Active reading

What are some proposed extensions to paper proposed by the work?

- Facilitate easy transference of physical connections to a persistent digital format
    - Users able to draw command gestures on paper to tag a paragraph, email selected areas, copy selections to a notepad, or create links to related documents
- Support for active reading tasks
    - Managing annotations: tagging segments of text
    - Linking paper documents: Capturing physical collages, explicitly linking paper documents
- A structured gesture command system customized for pen and paper environment

What design constraints or objectives guided the work's implementation of the proposed extensions?

- Respect current paper practices
- Provide flexible, simple, reliable commands
- Ensure commands are human-readable
- Design an extensible command system

How are the proposed extensions implemented?

- Anoto digital pen technology for user stroke capture

What findings have been obtained from either the implementation process or an evaluation of the proposed system?

- There are several concerns voiced in the evaluation study regarding feedback
    - Level of feedback strongly depends on the reliability of the system

        - If the system had a high rate of gesture recognition (a presumed limitation), participants felt the current level of feedback would be acceptable
    - Two additional forms of feedback potentially useful
        - A gesture mode indicator
        - Confirmation that commands were recognized
    - Additional feedback for the paste operation potentially helpful