

Pen and Touch Research at Brown University

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2001 – 2010 – Tablet Research (1/2)

Music Notepad

Lineogrammer

ChemPad

The screenshot displays the 'Line-o-grammer' application window. The title bar reads 'Line-o-grammer'. The interface includes a menu bar with 'Home', 'Manipulate', 'File', and 'Unimplemented'. A toolbar below the menu bar contains icons for 'Delete', 'Select', 'Line', 'Simple Shape', 'Complex Shape', 'Text', 'Fonts', 'Clear', 'Undo', and 'Zoom'. The main workspace shows a drawing of a penguin standing on a yellow rectangular block. The penguin's beak is highlighted in orange and labeled 'Beak' in a light blue box. The penguin's tail is highlighted in purple and labeled 'Tail' in a light blue box. To the left of the main workspace is a vertical sidebar with various tool icons and labels: 'ChemPad', 'File', 'Ink Mode', 'Chemistry', 'Annotation', 'Shortcuts', 'Clear All', 'Reagents', 'Condition', 'Panels', 'Ink Panel', and 'C27H42O'. To the right of the main workspace, there are two smaller windows. The top window shows a green textured surface, and the bottom window shows a ball-and-stick molecular model of a complex organic molecule.



2001 – 2010 – Tablet Research (2/2)

MathPad2 and variations

MathPaper

Fluid Math

Math Tutor

Common de
gesture reco

$6x - \frac{3}{5}y = 9$
 $4y + 2x = 5$

$6x - \frac{3}{5}y = 9$
 $-12y - 6x = -15$

$-12y - \frac{3}{5}y = 9 - 15$
 $-\frac{60}{5}y - \frac{3}{5}y = -6$
 $\frac{63}{5}y = 6$
 $y = \frac{30}{63}$
 $y = \frac{10}{21}$

$2x = \frac{5}{21}$

$2x = \frac{65}{21}$

$K=20$
 $m=10$

Start new problem



2011 - ... Surface Research

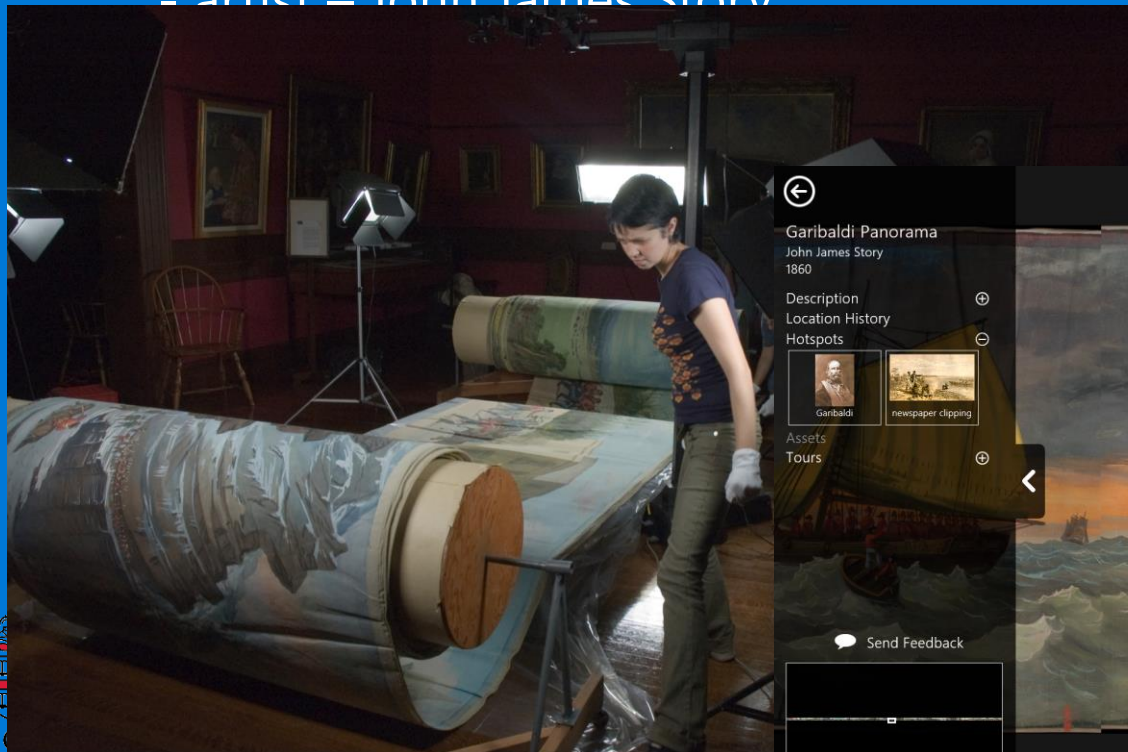
- Because of smartphones and tablets pen and touch UIs have become mainstream
- Interesting research problems e.g multi-modal collaborative UIs
 - HUB + Surfaces provide great experimental platforms



Current Surface/HUB Research Projects (1/2)

(Garibaldi Panorama explorer)

— artist — John James Story



←

Garibaldi Panorama
John James Story
1860

Description ⊕
Location History ⊖
Hotspots

Assets ⊕

Tours <

Send Feedback

Progress bar



Current Surface/HUB Research Projects (2/2)

PanoramicData – Friday's co-located event

"Digital Ink and Touch"

TimeSketch – Friday

Shaper – Friday

NuSys – Friday

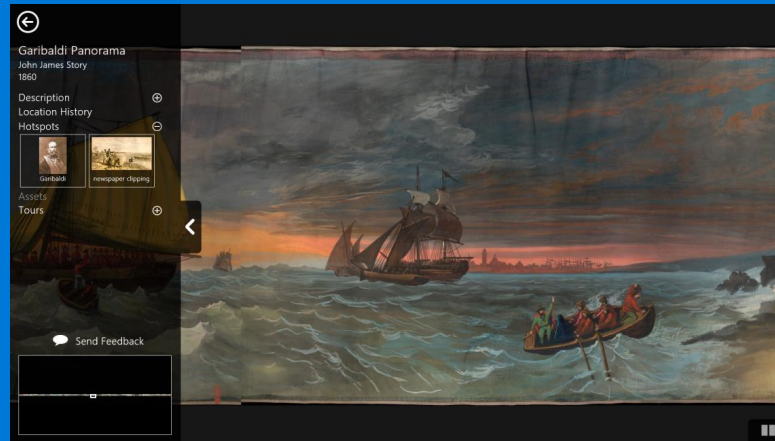
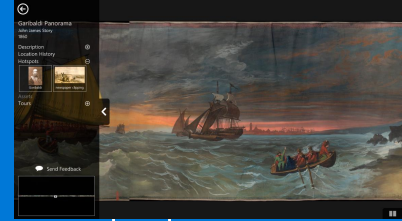
The screenshot displays a Windows desktop environment. On the left, a web browser window shows the Wikipedia article for Vincent van Gogh. The article text includes: "Vincent Willem van Gogh (Dutch [ˈvɪnsɪnt ˈvɪlɛm vɑn ˈɔx] ⓘ listen)[ⓘ] 11 30 March 1853 – 29 July 1890) was a major Post-Impressionist painter. He was a Dutch artist whose work had a far-reaching influence on 20th-century art. His output includes portraits, self portraits, landscapes, and still lifes of cypresses, wheat fields and sunflowers. Van Gogh drew as a child but did not paint until his late twenties; he completed many of his best-known works during the last two years of his life. In just over a decade, he produced more than 2,100 artworks, including 860 oil paintings and more than 1,300 watercolors, drawings, sketches and prints. Van Gogh was born to upper middle class parents and spent his early adulthood working for a firm of art dealers. He traveled between The Hague, London and Paris, after which he taught in England at Isleworth and Ramsgate. He was deeply religious as a younger man and aspired to be a pastor. From 1879 he worked as a missionary in a mining region in Belgium, where he began to sketch people from the local community. In 1885 he painted *The Potato Eaters*, considered his first major work. His palette then consisted mainly of somber earth tones and showed no sign of the vivid coloration that distinguished his later paintings. In March 1886, he moved to Paris and discovered the French Impressionists. Later, he moved to the south of France and was influenced by the strong sunlight he found there. His paintings grew brighter in color, and he developed the unique and highly recognizable style that became fully realized during his stay in Arles in 1888. After years of anxiety and frequent bouts of mental illness,^[18] he died aged 37 from a self-

On the right, the NuSys application interface is visible. It features a central node labeled "Vincent van Gogh" connected to several other nodes: "artworks", "Self-Portrait, Spring 1887, Oil on pasteboard, 42 x 33.7 cm., Art Institute of Chicago (F 345)", "Born 30 March 1853 Zundert, Netherlands", "Died 29 July 1890 (aged 37) Auvers-sur-Oise, France", "Education Aston Moore", "Known for Painting, drawing", "Notable work *Starry Night*, *Sunflowers*, *Bedroom in Arles*, *Portrait of Dr. Gache*, *Sorrow*", and "Movement Post-Impressionism". There are also thumbnail images of various artworks, including a landscape and an interior scene.



TAG (Touch Art Gallery) 1/2

- TAG lets curators, educators, ... create, contextualize, and share digital collections
- **Kiosk mode** for walkup users
 - explore even the largest artworks with familiar touch gestures
 - interact with multiple artworks simultaneously using split screen
 - view interactive **tours**



TAG (Touch Art Gallery) 2/2

- **Authoring mode** for non-digerati
 - KISS design principle
 - direct manipulation only, no scripting
 - time line for authoring
- Content is stored in the cloud
- Kiosk mode runs on browsers
- Authoring mode on Windows 8/8.1
- Sponsored by Microsoft Research

