HCI research-to-industry “tire tracks” diagram [Shneiderman 2017]
Creativity

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CS 376
Project fair I today
Create.
Authoring Tools
I love sketch
[Bae, Balakrishnan, and Singh, UIST 2008]
Draco: kinetic textures

[Habib et al., CHI 2014]
3D puppetry
[Held et al., UIST ’12]

- Kinect motion capture + texture capture = puppets
Musical underscoring
[Rubin et al., UIST ’12]
MAN: Sure. Um, some of our customers, that have been working in the print for many, many years, are used to be able to express their ideas in, uh, very specific ways. They, they are used to be able to control exactly what goes on on the page. They bring the story, they bring the images, and they bring the layout as well, which is a big part of making a story and communicating that story. And, um, with the digital media and the tablets that are used now to bring this content, uh, they've quickly run into some, uh, limitations with trying to express the same thing with the HTML and CSS. So what we're trying...
Video
[Berthouzoz, Li and Agrawala SIGGRAPH ’12]
Gaining Tool Expertise

- Community Commands [Matejka et al. 2009]

Applying collaborative filtering techniques to introduce new tools in Autodesk
Peer production
What is peer production?

[Benkler 2006]

- Self-organizing sets of individuals who create a common resource
  - YouTube
  - Etsy
- Also **commons-based** peer production, where there is explicit collaboration
  - Wikipedia
  - Reddit
Should we collaborate?

[Settles and Dow, CHI 2013]

- Regression predicting which pairs of February Album Writing Month users would collaborate on a song
- Keys: complementary skills, previous messaging (existing tie)

Path Variable | Coeff.
--- | ---
A ← follows ← B | 8.433
A ← follows → B | 7.926
A ← messaged ← B | 4.935
A ← messaged → B | 4.183
A → wrote → 🎵 ← commented ← B | 4.160
A ← commented → 🎵 ← wrote ← B | 3.879
A ← follows ← 👥 ← collabed → 👥 ← messaged → B | -0.434
A ← follows → 👥 ← collabed → 👥 ← messaged ← B | -0.484
A ← liked → 🎵 ← liked ← 👥 ← liked → 🎵 ← liked ← B | -0.776
A ← follows ← 👥 ← collabed → 👥 ← messaged ← B | -1.334
A ← liked → 🎵 ← liked ← B | -1.814

(intecept) | -3.707

A → wrote → 🎵 → tag → 👥 ← tag → 🎵 ← commented ← B | 0.868
A ← commented → 🎵 → tag → 👥 ← tag → 🎵 ← wrote ← B | 0.504
A ← wrote → 🎵 → tag → 👥 ← tag → 🎵 ← wrote ← B | -0.388
The cost of collaboration
[Hill and Monroy-Hernández, 2013]

- Test common wisdom about creative collaboration
- Dependent variable: likes on the Scratch website as a measure of quality
- Common wisdom: collaborations produce better results
  - On Scratch: remixes of prior projects got fewer likes
- Common wisdom: collaboration can improve functional items (e.g., code), not art (e.g., images, sounds)
  - On Scratch: remixes of code-heavy projects got more likes
Cooks or cobblers?

[Yu and Nickerson, CHI 2011]

- Can crowds be creative?
- 1047 workers collaborated in an iterative process of design, evaluation, and combination
- Genetic algorithm asks the crowd to recombine previous ideas
Mechanical Novel

[Kim et al., CSCW 2017]

- How might we enable crowds to achieve complex work such as writing short stories?
- Unlike most crowdsourcing workflows, creative work requires tight interconnections between different parts of a story, and between the high-level goal and low-level text.

Reflect
choose a high-level goal

Revise
break into tasks and edit
Leadership
Redistributing leadership
[Luther, Fiesler and Bruckman CSCW 2013]

- Why do more than 80% of collaborations on Newgrounds fail?
- Theory: leaders are overburdened
- Solution: make it easier to *redistribute* leadership by decentralizing it and allowing leaders to give out responsibility
Perils and opportunities

- Unlike other areas, these are extremely non-task oriented goals
- What perspective do you take?
  - Do you make existing creative actions easier?
  - Do you give people access to a palette of tools they didn’t have?
  - Do you try to provide inspiration?
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