Visualizing Aggregate Image Edits

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Analyzing Image Data: Cropped Photos

- Interested in aesthetic preferences of photograph composition
- Collect cropped photos from many users (via Mechanical Turk)
- Aggregate various crops for patterns across image features and croppers’ traits
Problem

- How can we visualize large sets of cropped images to enable analysis for aesthetic preferences?
  - Comparisons become difficult for many images (50-100)...difficult to isolate patterns
  - Must aggregate/filter many images into a single, more meaningful image
  - Need support for querying in image domain
  - Interactivity ideal for exploratory data analysis
Related Work

- Existing image viewers focus on displaying many independent photographs (layout, configuration)

- Visualization & User-Modeling for Browsing Personal Photo Libraries [Moghaddam, IJCV 2004]
Related Work

- Content-Based Image Visualization [Chen, IEEE 2000]
Challenges

- Meaningful aggregation of all crops
  - Pixel-Voting: Every pixel within the cropped photo gets a vote (+1), and the rest loses a vote (-1); Sum votes for all crops
Challenges

• Interactive queries in image and table domains
  - User selects rectangular region in original image to view crops that include that region
  - How to display filtered crops?
    • toggle density map over original image, or
    • transparent overlay with threshold slider
Small Multiples

• Also display statistical charts for related table data
  - Original Photo: Category, cropped versions
  - Cropped Photo: Corner locations relative to original, Cropper
  - Cropper: age, gender, photography and art experience
Milestones

- Framework for loading images and data
- Data query engine and interface
- Interface for brushing and linking via images
References
