Systems Lab Project 2007-08

The Applications of Image Processing Techniques to Sign Language Recognition Using Webcams

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3rd Quarter Project Update

This quarter, new features added were primarily on the backend to support the line interpretation, which I began to implement. The features include:

- A mutable list data structure with its own memory management, with the design and behavior fashioned after easy-to-use Python lists
  - Has pushing, popping, adding and removing from anywhere in the list
  - Can apply callback function to each item in the list
    - Void callbacks
    - Non-void callbacks
  - Initialization with empty list, variable number of items passed directly to the initializer function, or an array of items.
  - Supports all pointer types.
- An image reading and writing utility that allows all modules to easily access image data with a few standard function calls
  - Reading and writing in multiple formats
  - Supported formats (currently): Raw image data
  - Supported formats (projected): Raw, JPEG, TIFF, GIF, PNG
- Line chaining agent
  - Put lines together based on similarity
  - Add to chain structures in sorted order
  - Large interpretation optimization
- Line interpreter (incomplete)
  - Currently implements chains to put lines together
  - Projected: uses chains to find fingers