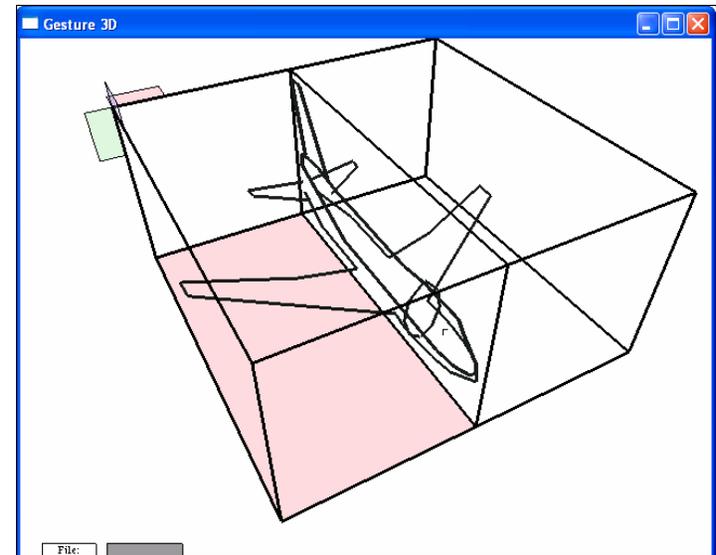
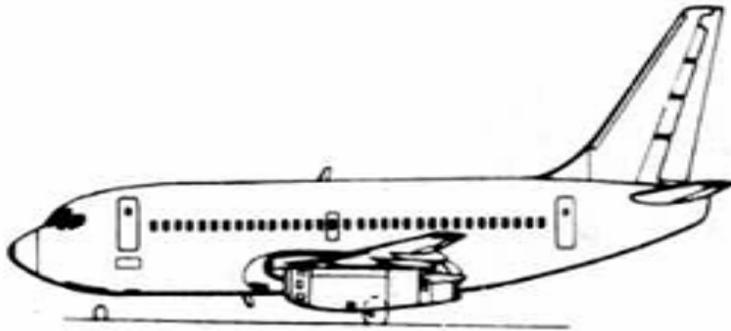


A Suggestive Interface for Image Guided 3D Sketching

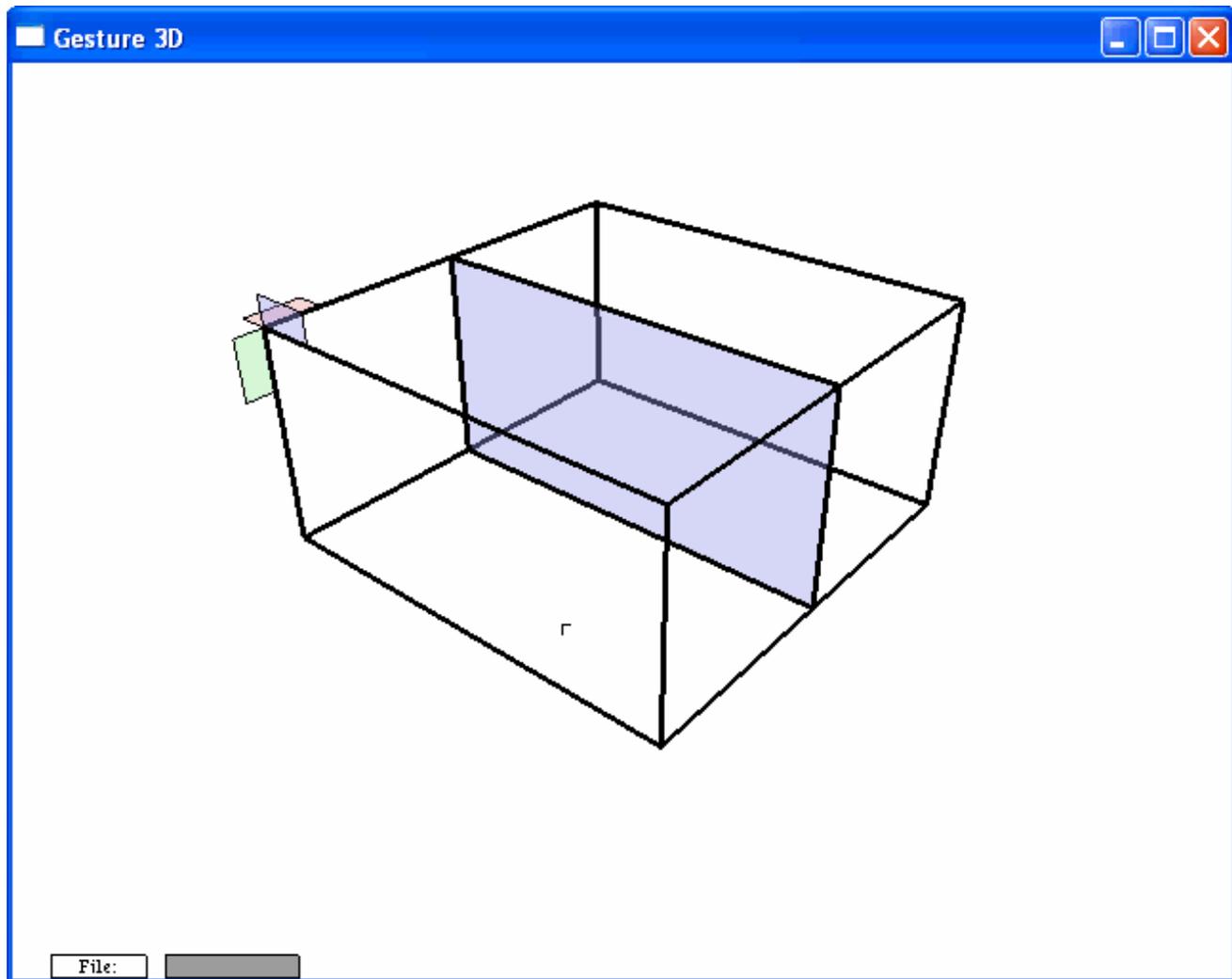
Steve Tsang, Ravin Balakrishnan,
Karan Singh, Abhishek Ranjan



Motivation



System Overview



System Features

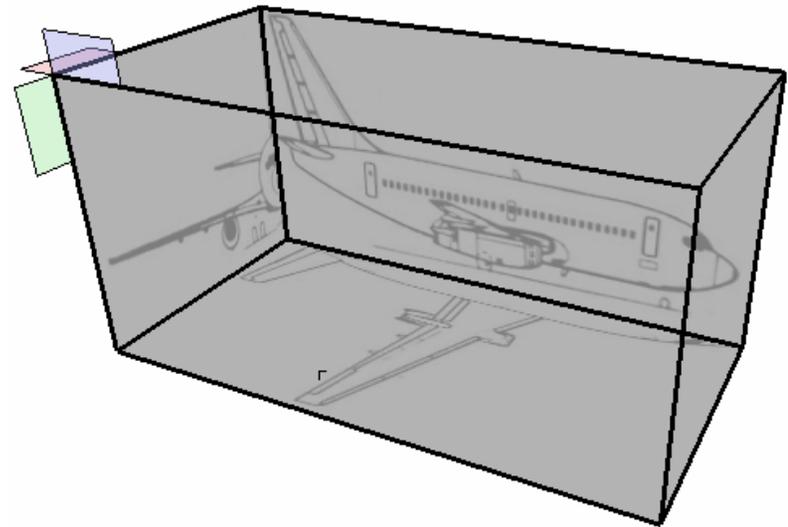
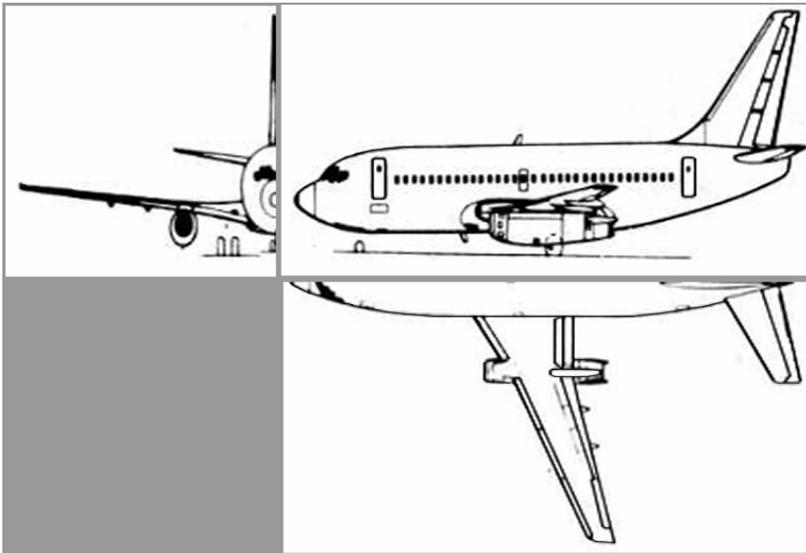
- Sketching
- Image templates
- Image-based interaction techniques
- Suggestions

Previous Work

- Zeleznik, Herndon, Hughes. (199?)
SKETCH: An interface for sketching 3D scenes
- Igarashi, Matsuoka, Tanaka. (199?)
Teddy: A sketching interface for 3D free form design.
- Igarashi, Hughes. (199?)
A suggestion interface for 3D drawing
- Grossman, Balakrishnan, Kurtenback, Fitzmaurice, Khan, Buxton. (200?)
Interaction techniques for 3D modeling on large displays

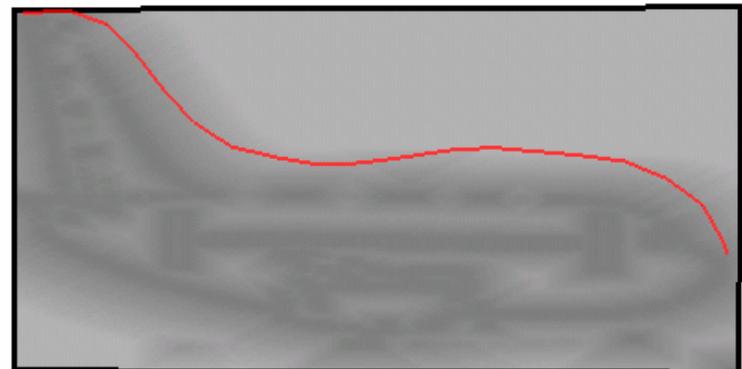
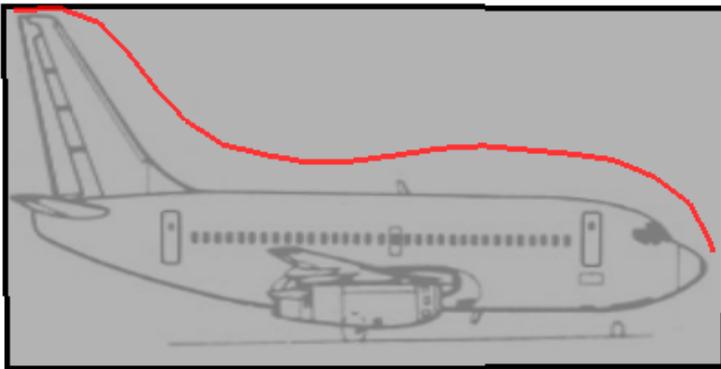
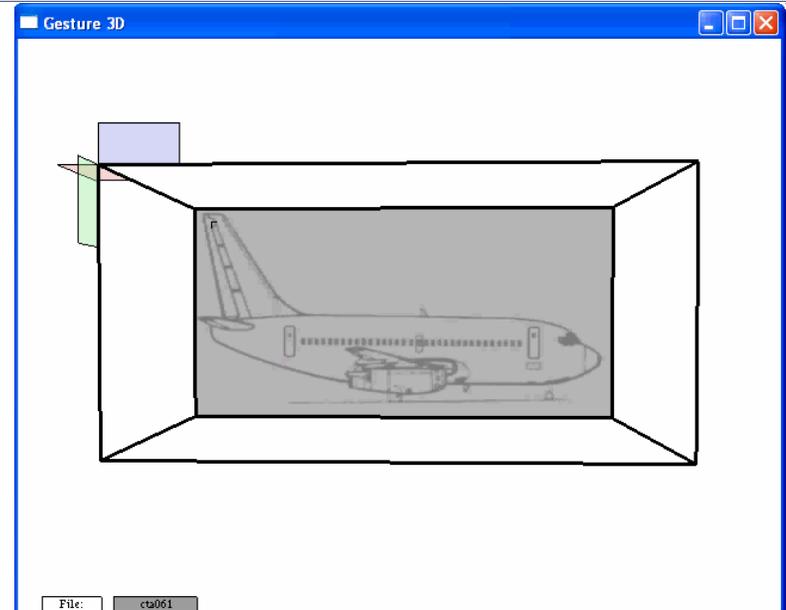
Image Guided Drawing

- Image Based Interaction techniques
 - Snapping
 - Gluing
 - Pinning



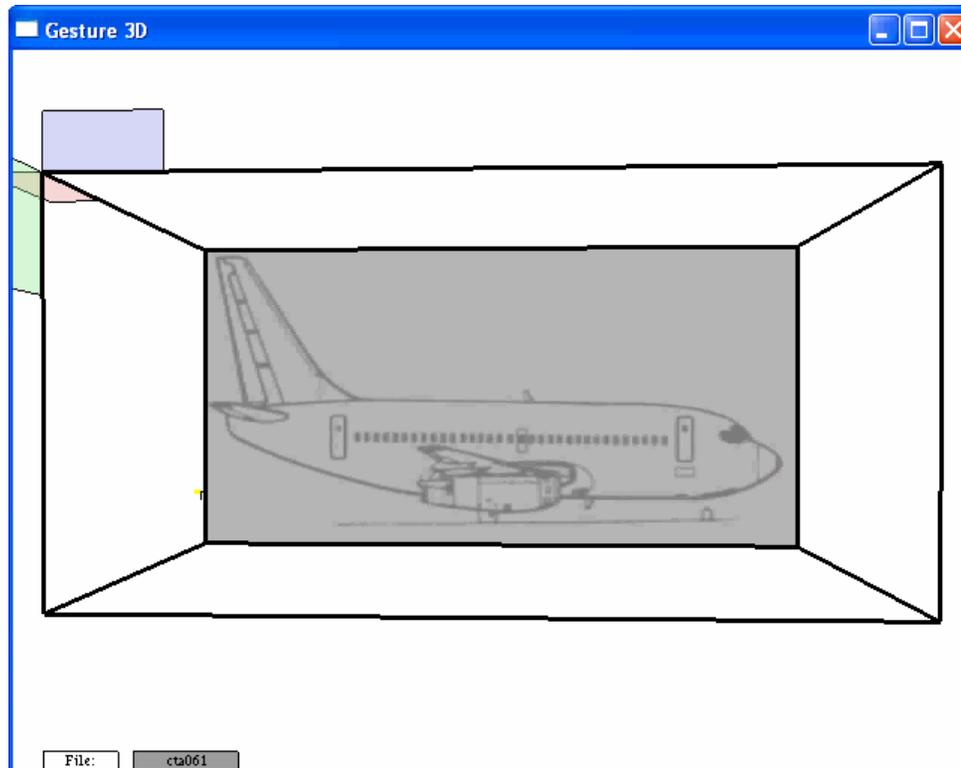
Snapping

- Drawn curves attracted to image template curves
- Intensity maps generated as image templates are applied



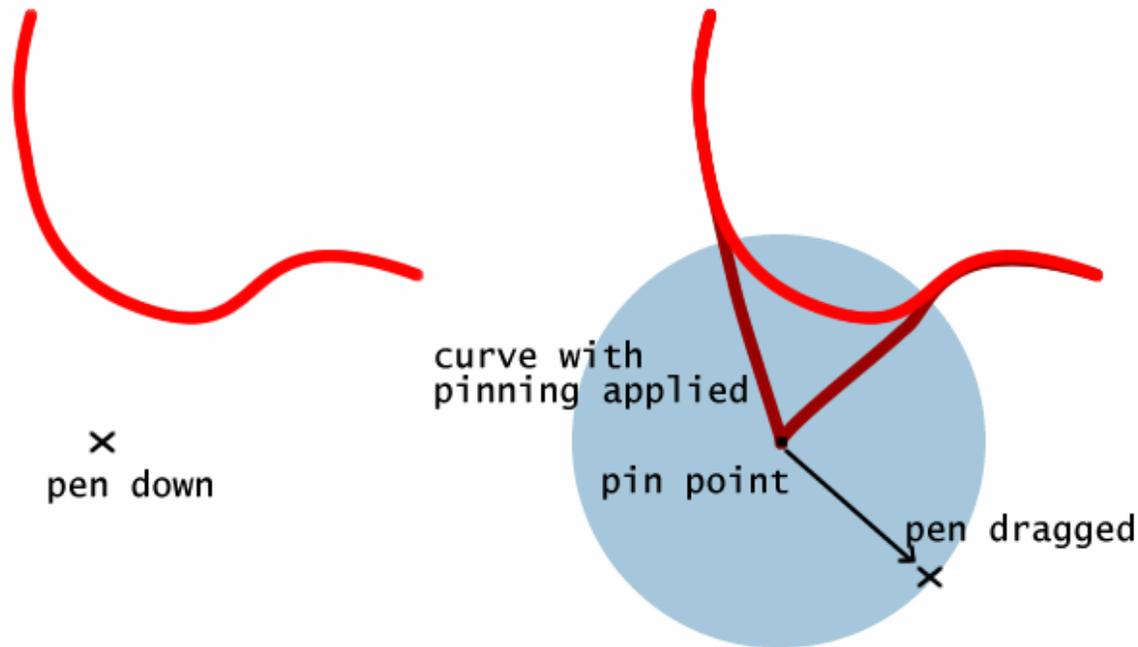
Gluing

- Allows user to specify parts of the curve to be excluded from snapping algorithm

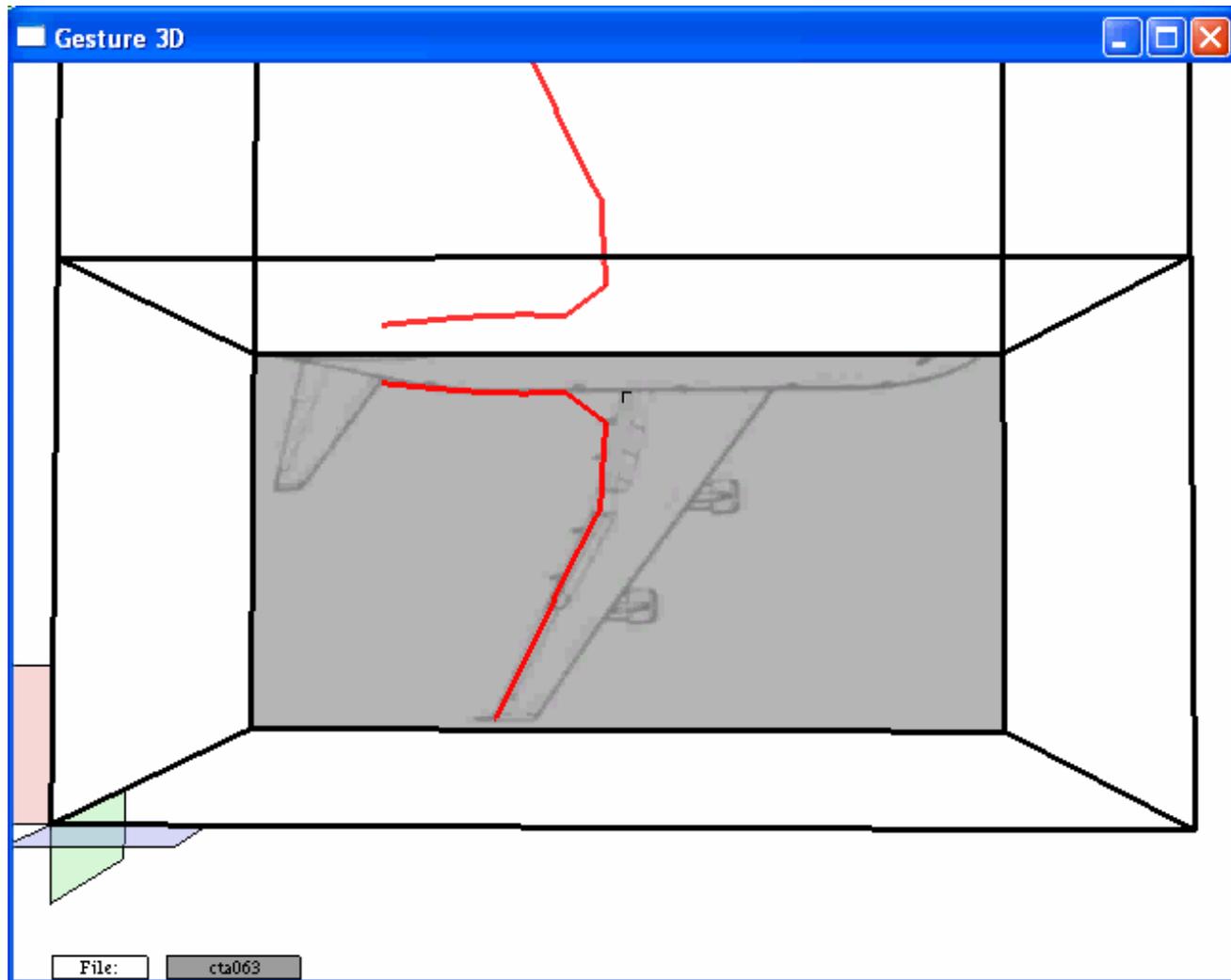


Pinning

- Fix a curve to a particular point



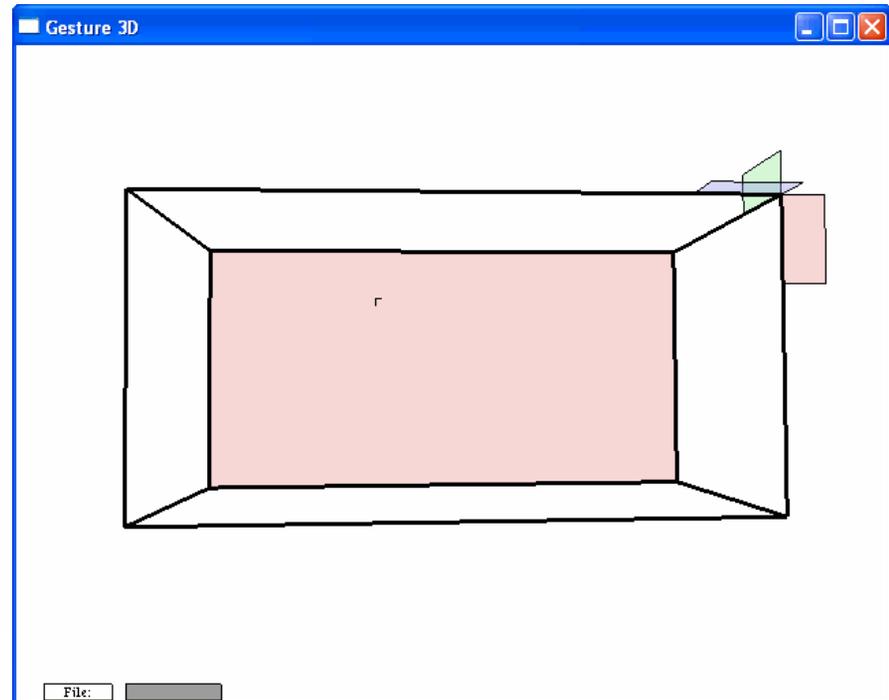
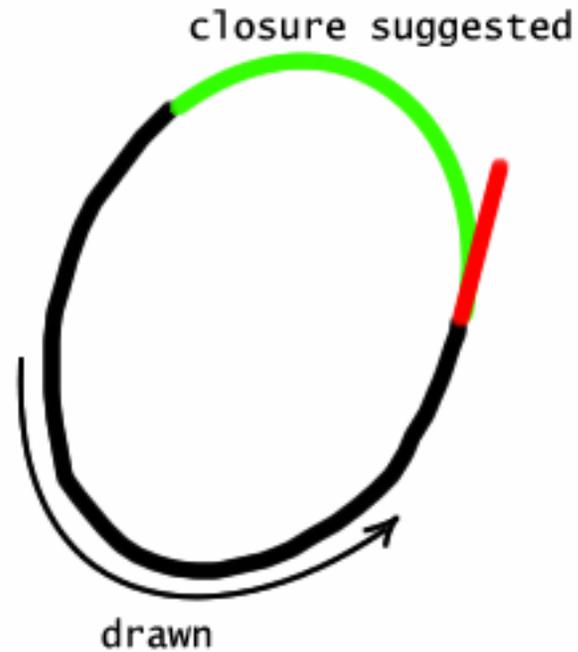
Pinning



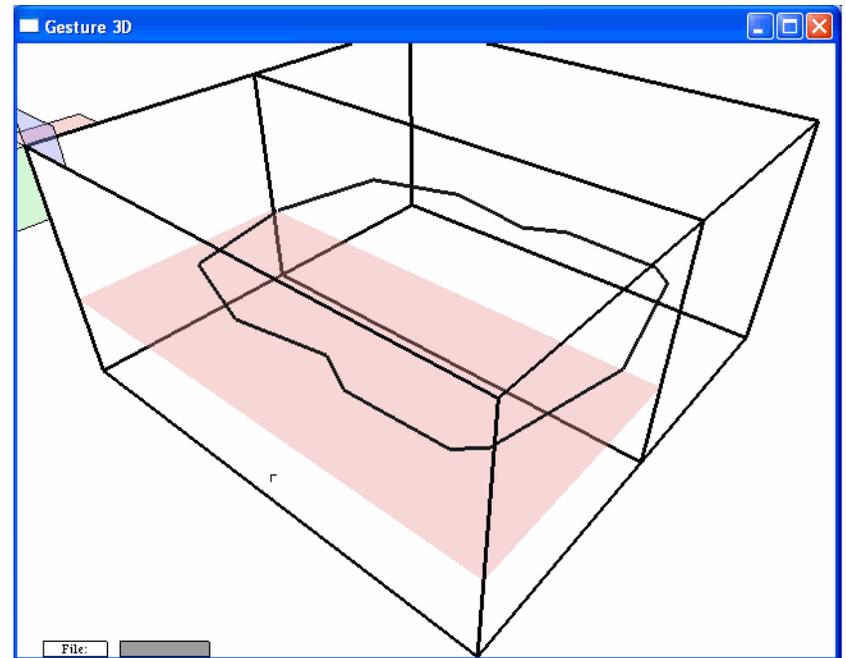
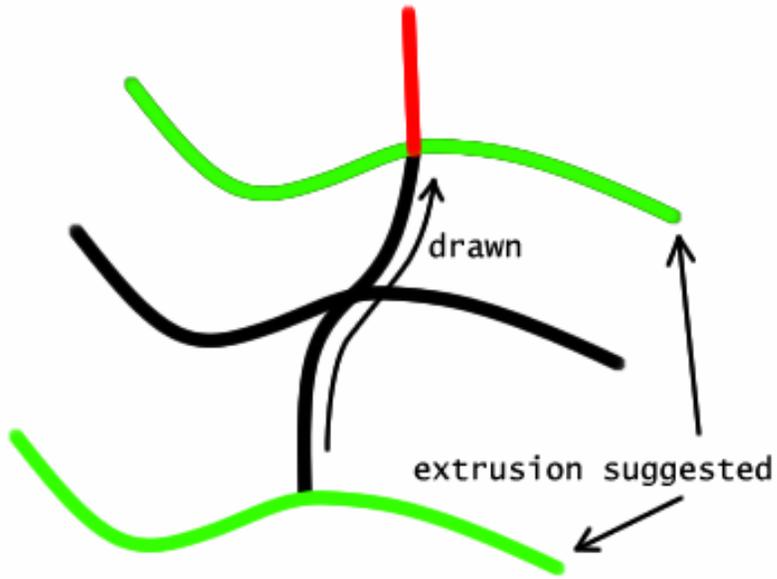
Geometry Suggestions

- System suggestions:
 - Closure
 - Extrusion
 - Database suggestions
- User responses:
 - Accept
 - Delete
 - Ignore

Closure Suggestions

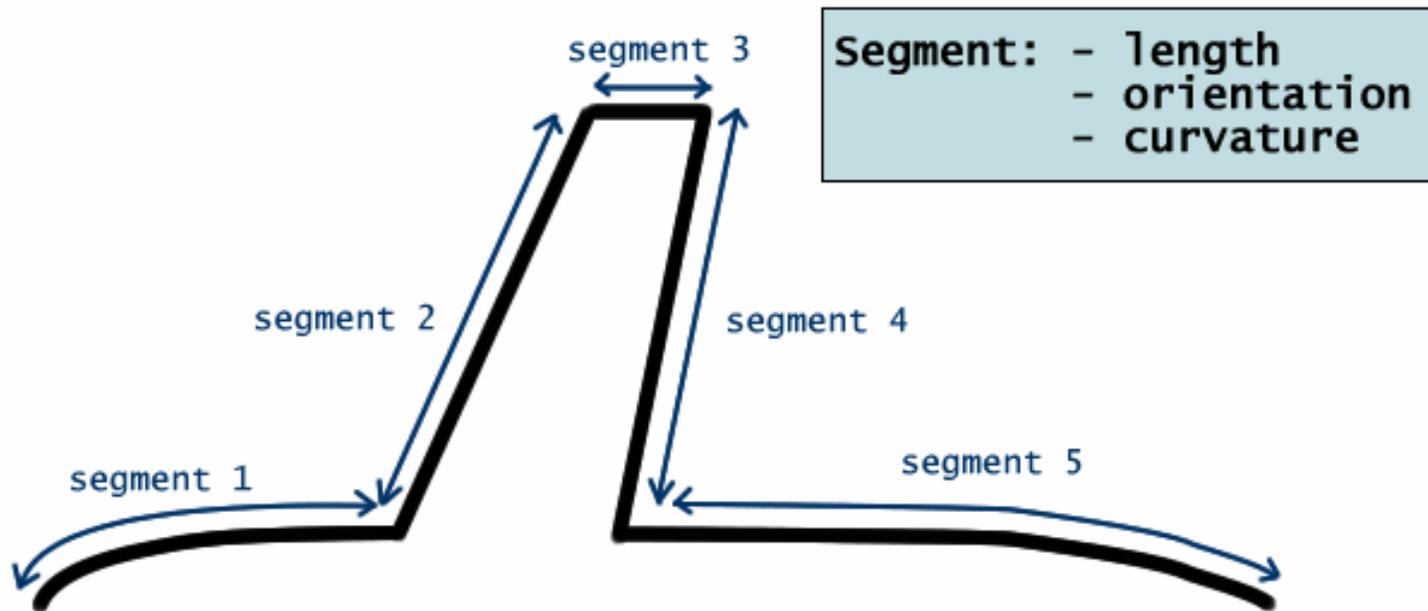


Extrusion

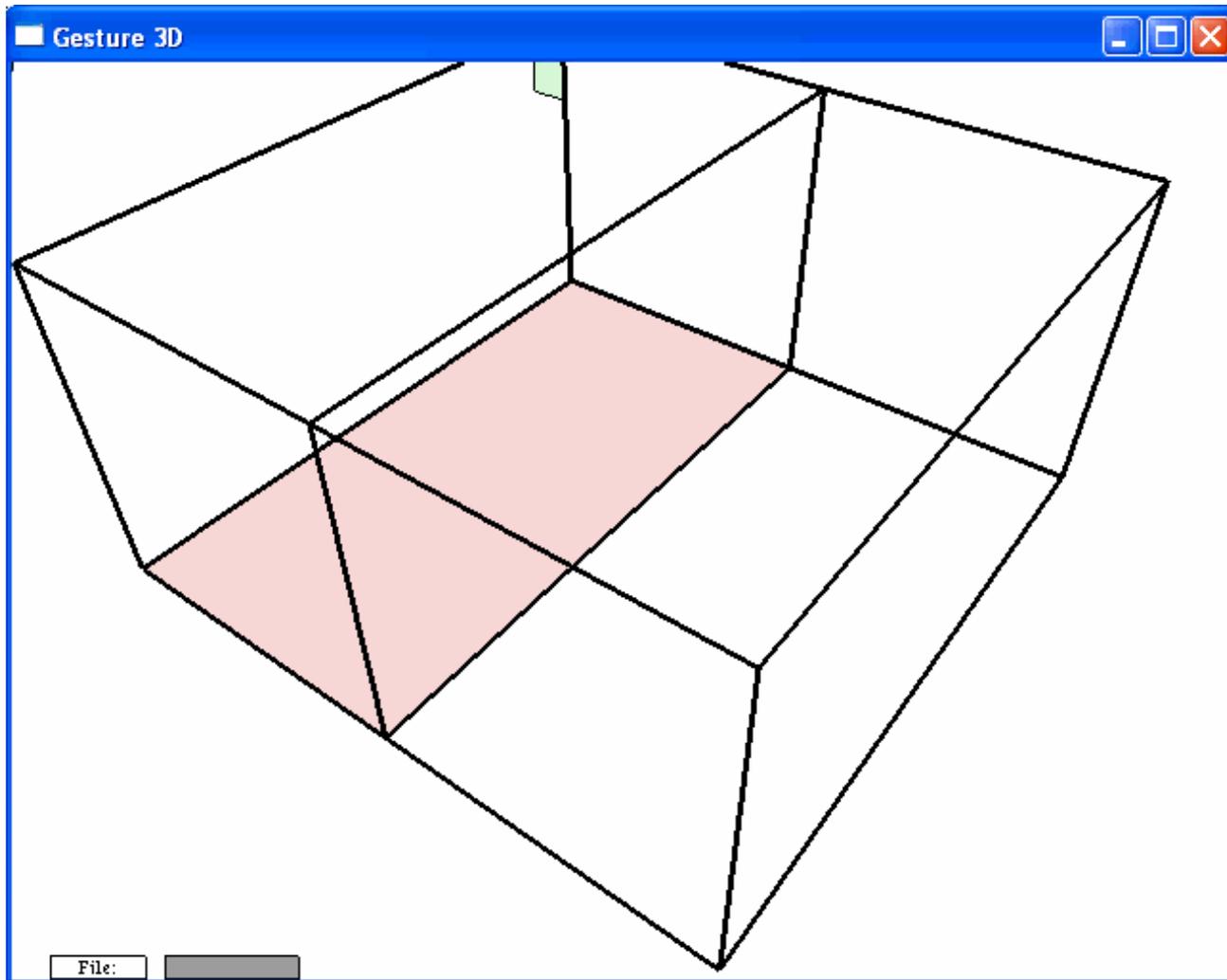


Database Suggestions

- Curve signatures

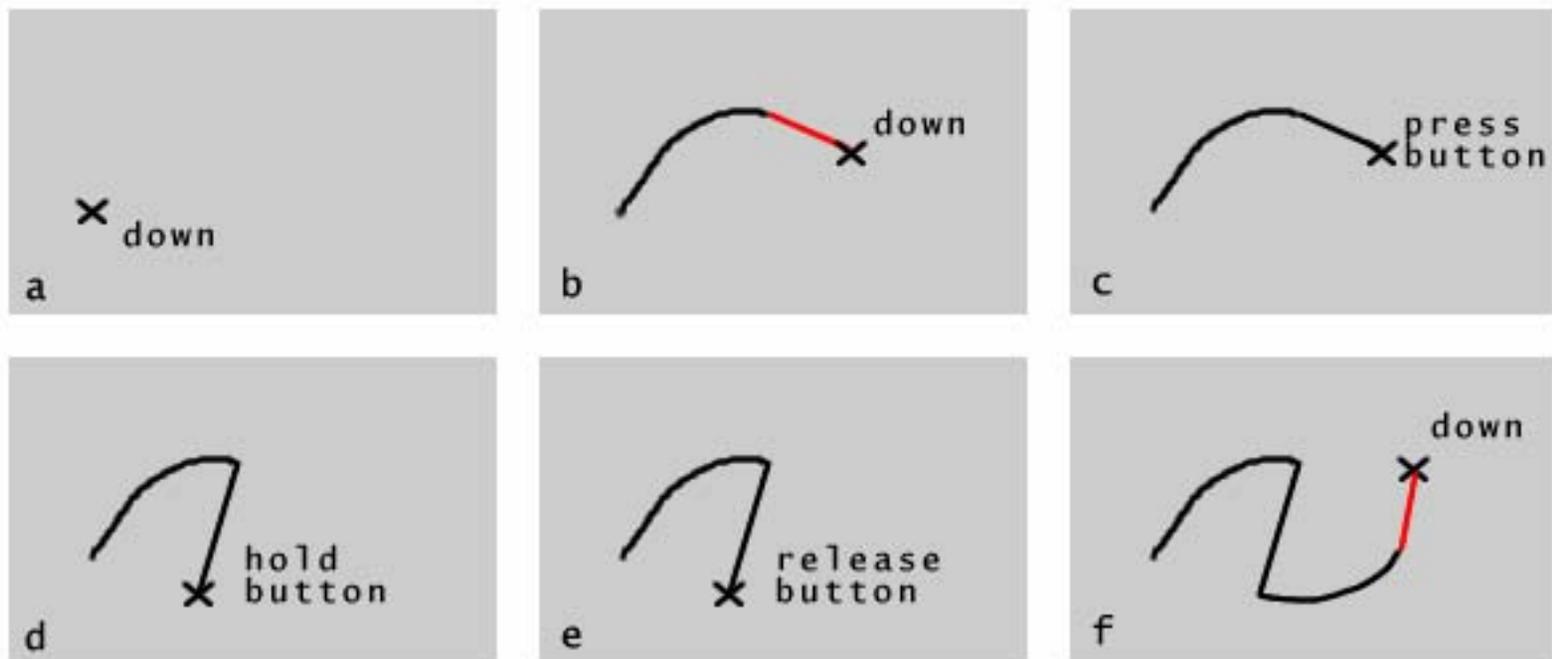


Database Suggestions



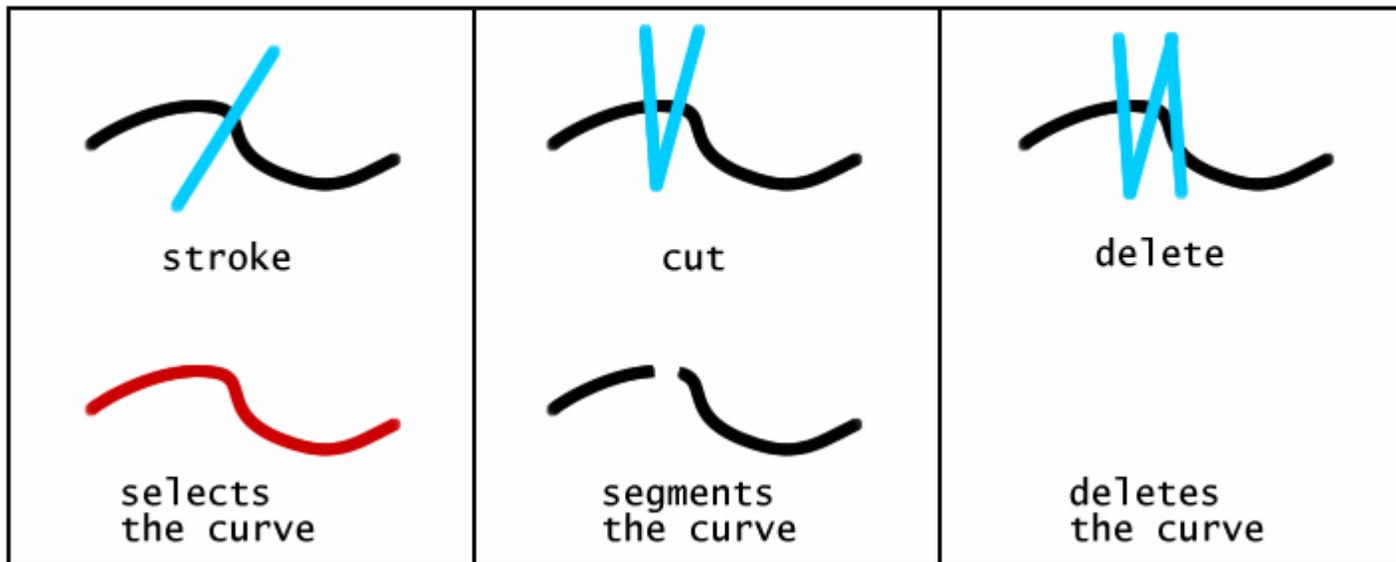
Curve and Line Creation

- One-handed tape drawing technique
- Press button for line drawing



Gestures

- Activated by pressure on pen
- stroke, cut, delete



Contributions

- Integrating existing images as a template
- Image-based interaction techniques to build 3D geometry
- Sketchable query to retrieve database geometry
- Geometry suggestions

Acknowledgements

MITACS

DGP lab members

Stan

Pinkie and Mercie