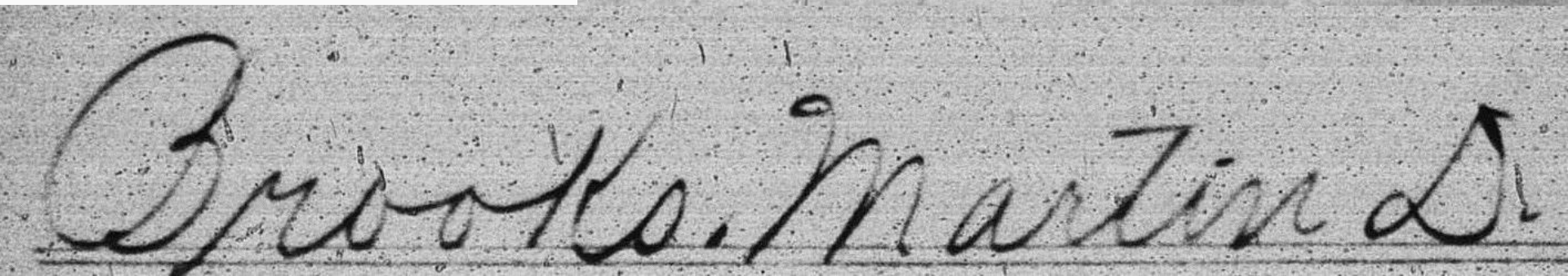
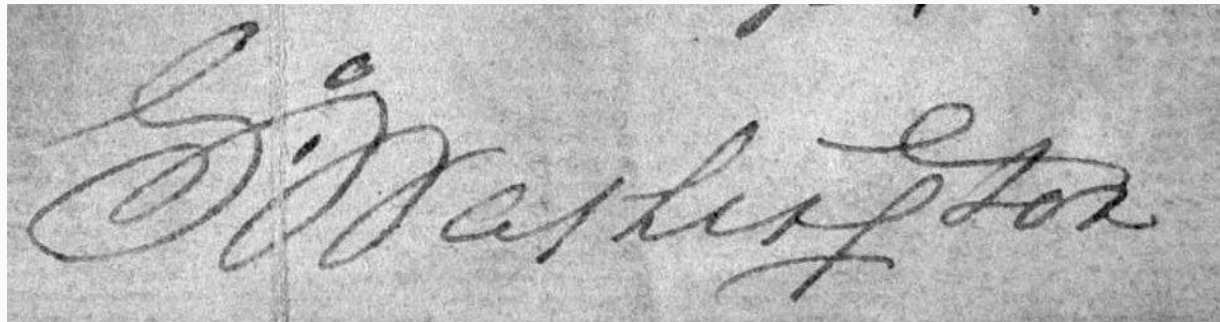


Stroke Extraction

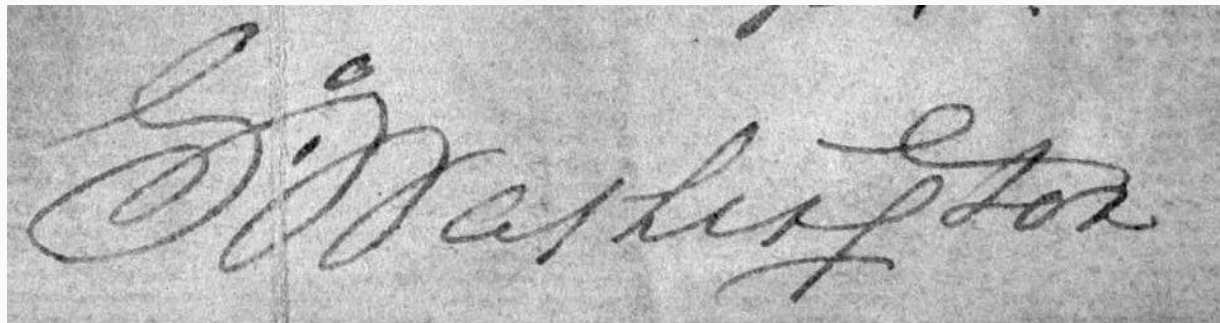
- Offline handwriting recognition
- Noise, faint strokes, and gaps



Related Work

- Skeletonization
- Local Search
- Graph Search

G. Washington



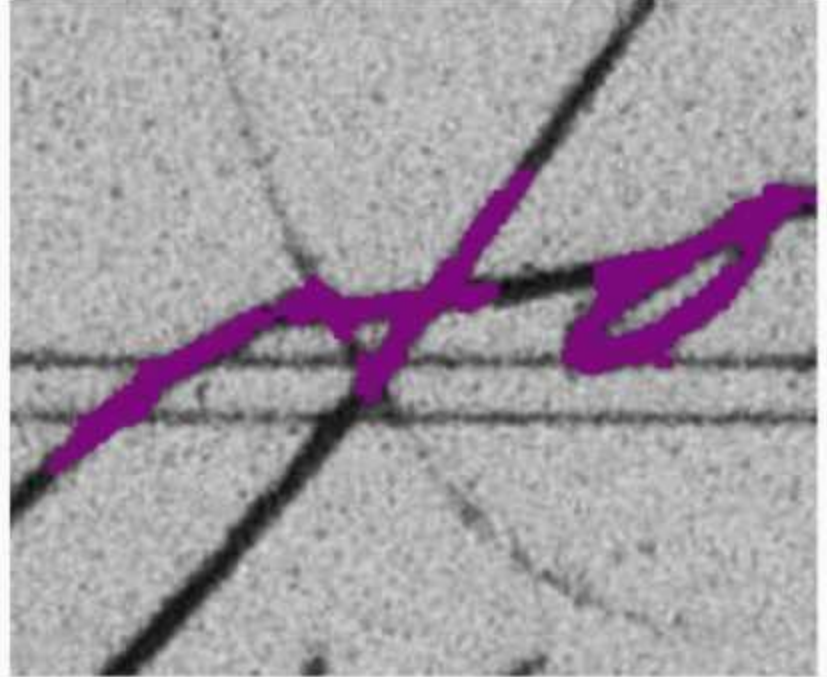
Intelligent Scissors

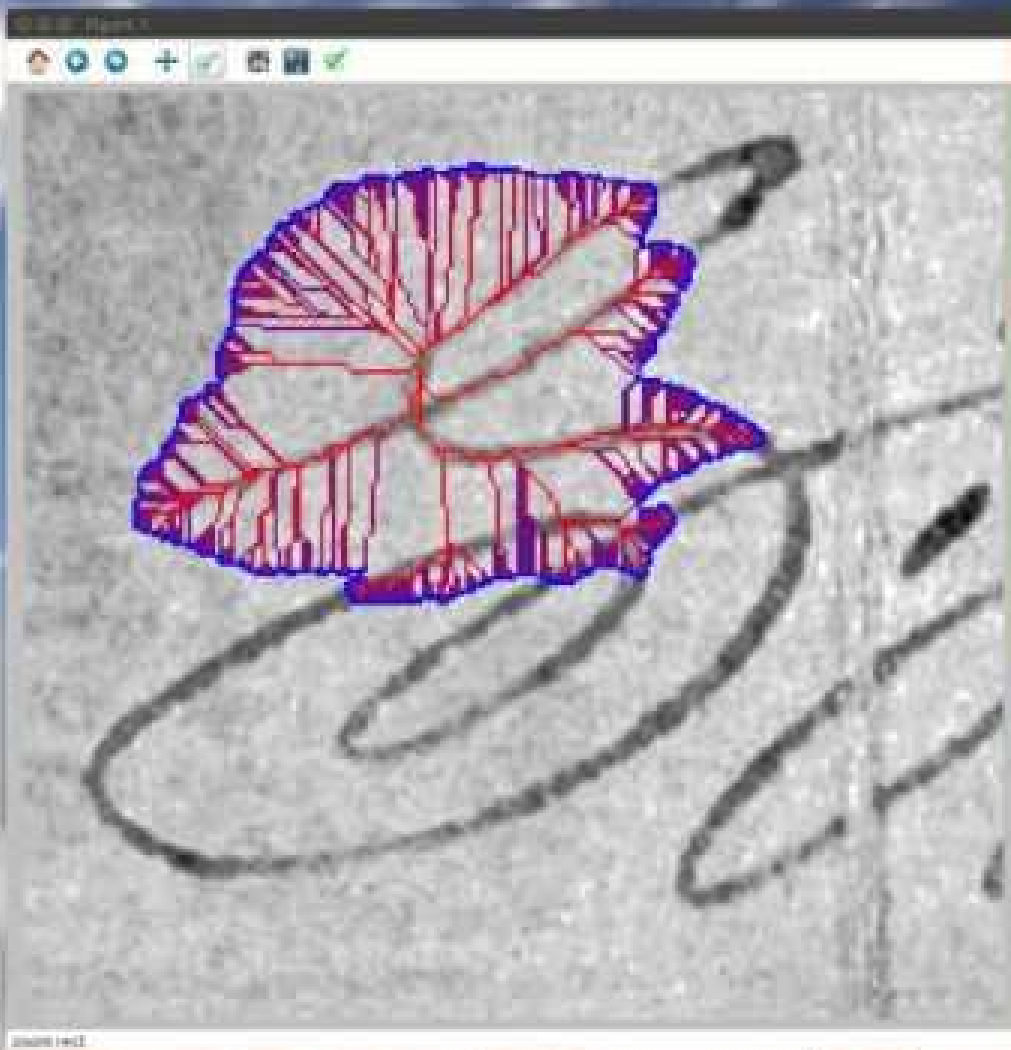
- Least-cost search of an image to find an edge
- Weighted sum of several gradient features
- Optimal path from seed point to every other point in the image

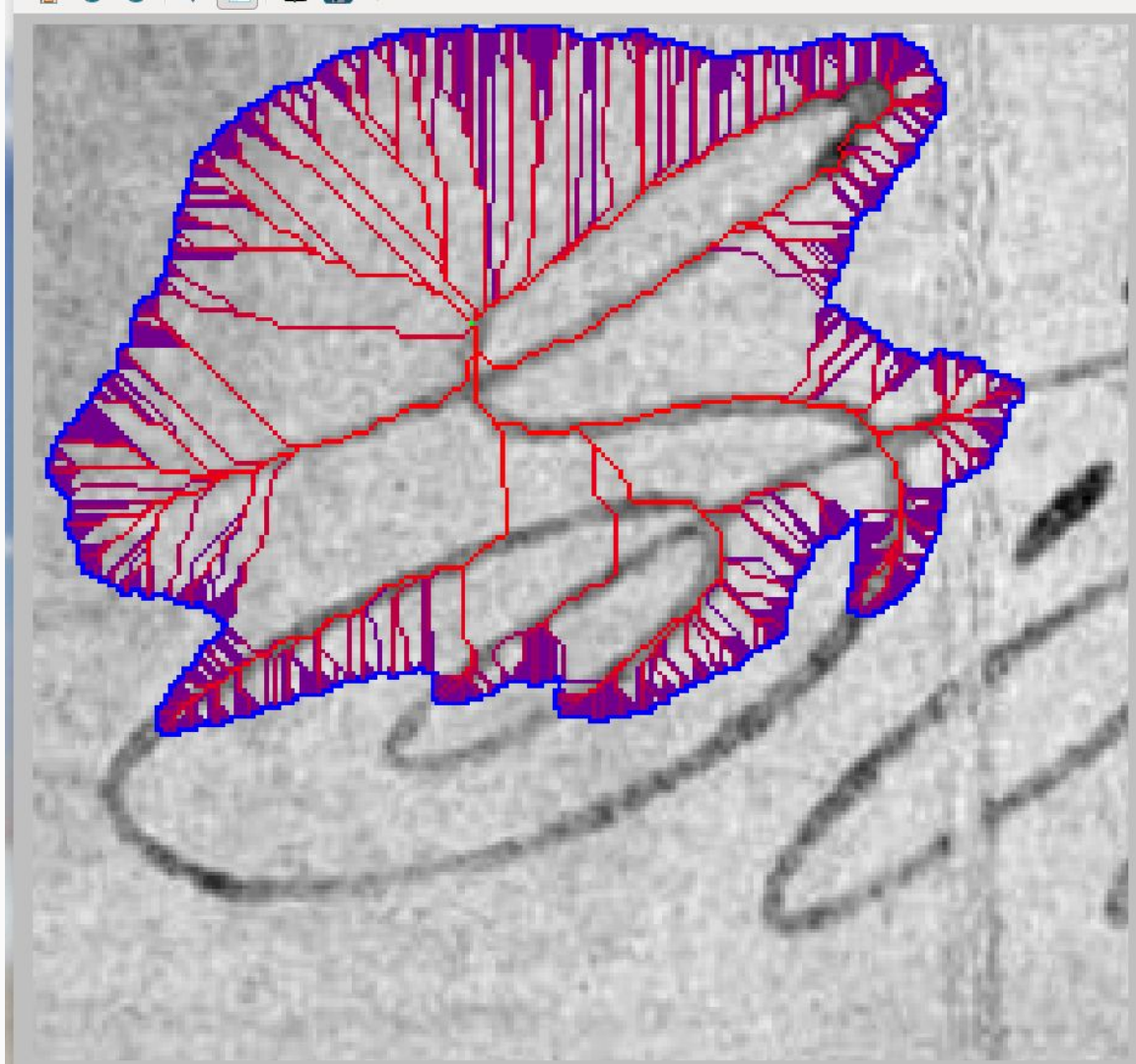


Intelligent Pen - Kevin Bauer

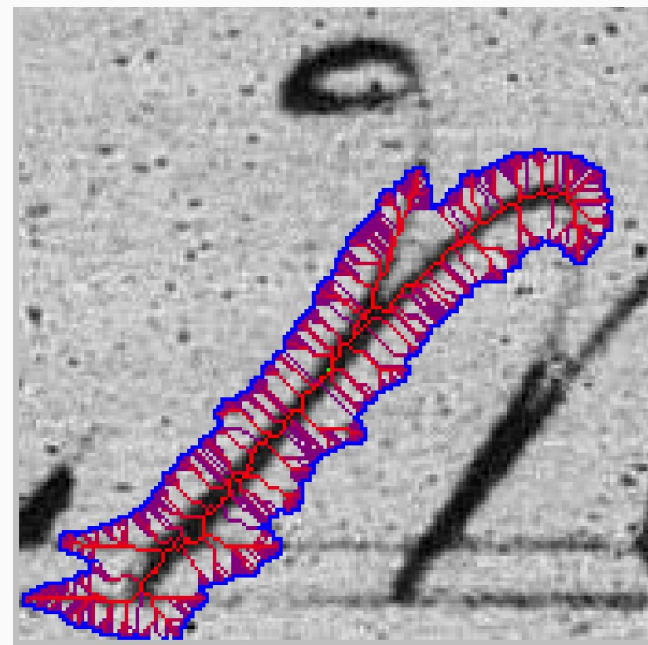
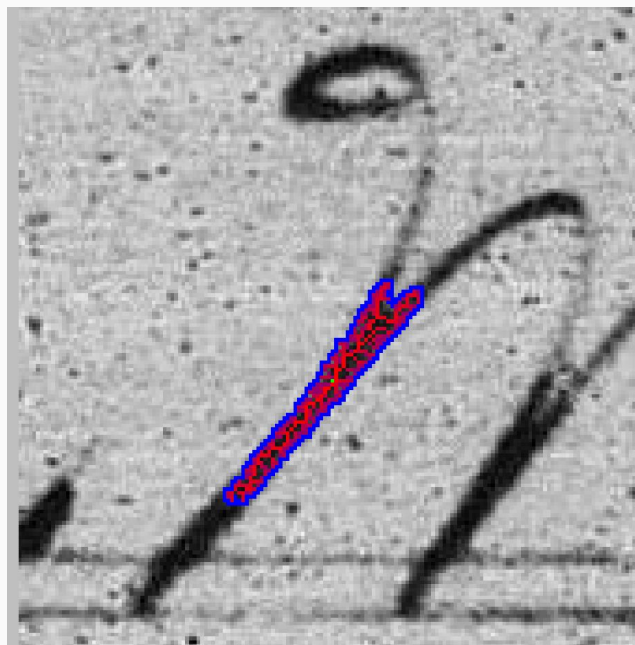
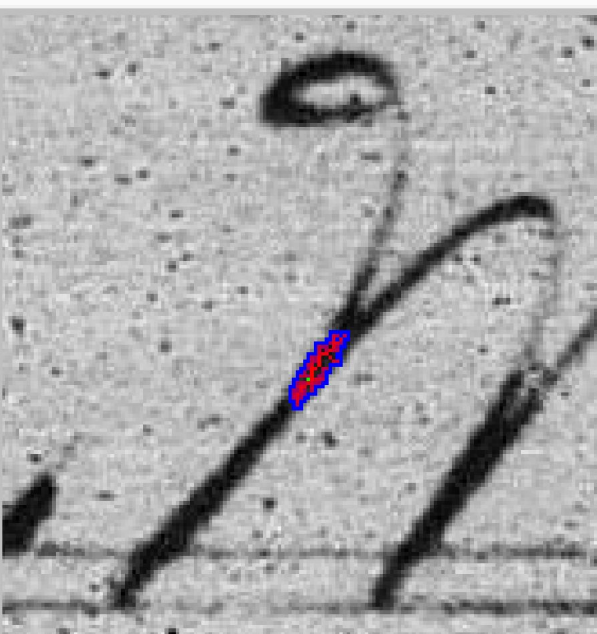
- Like Intelligent Scissors but without user interaction
- Multiple expanding wavefronts
- Creates new seeds on the fly as it builds out

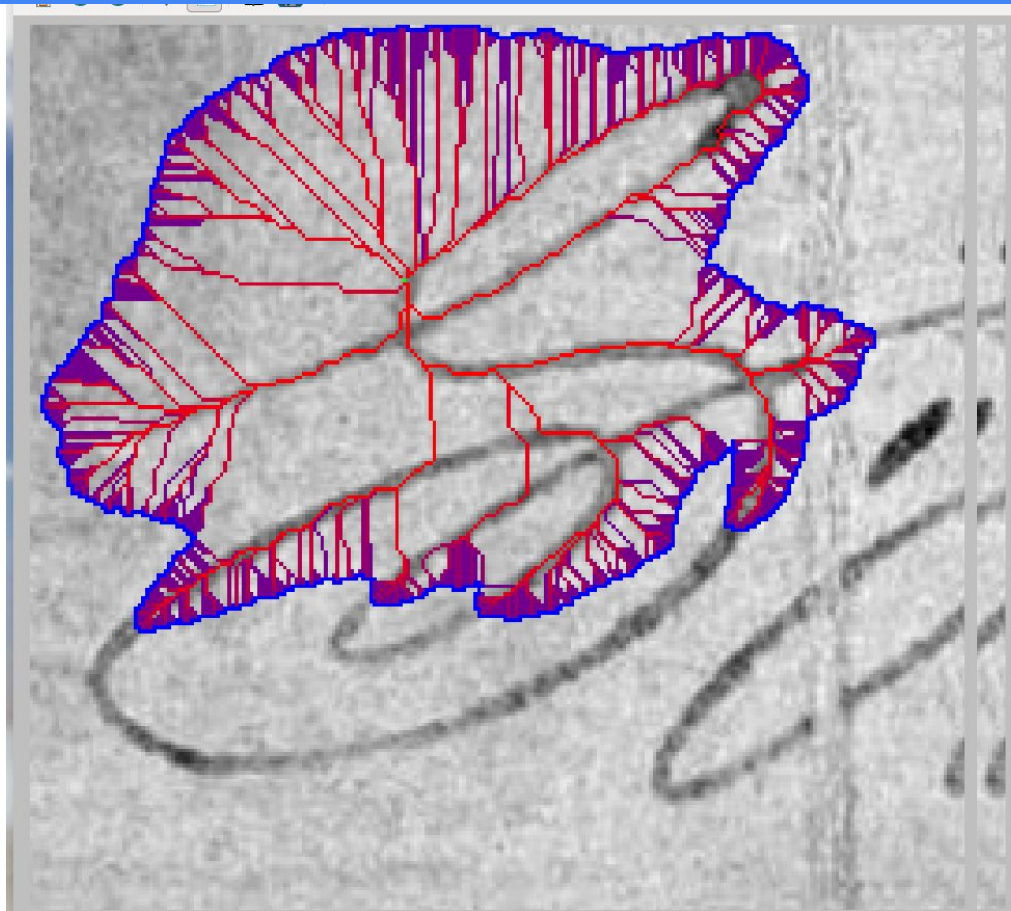
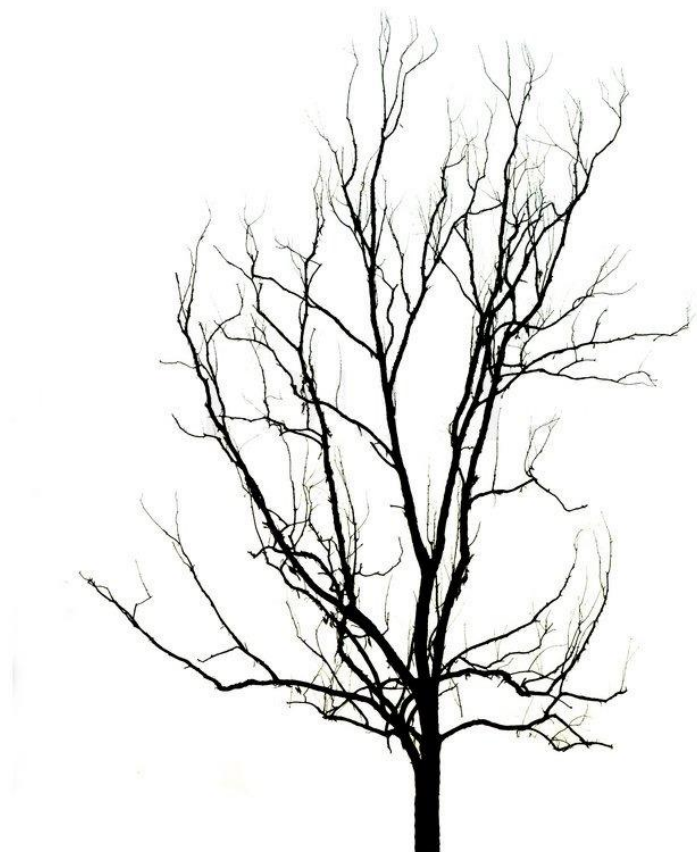


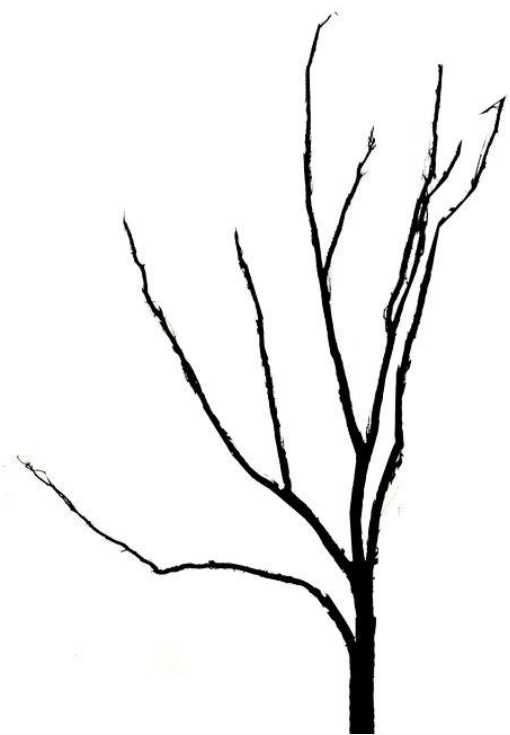




Intelligent Pen





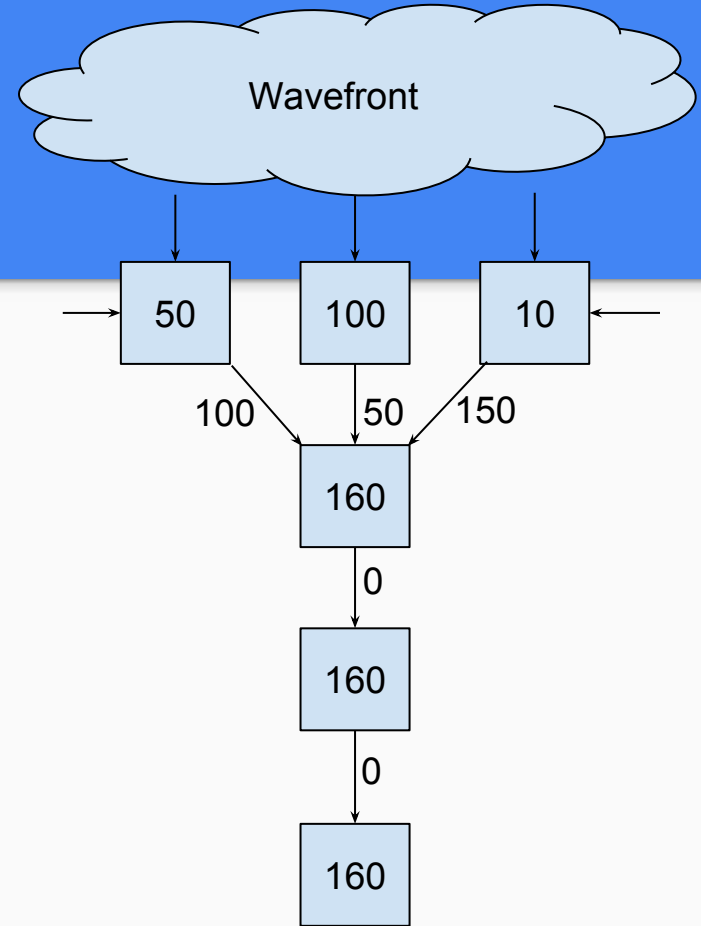


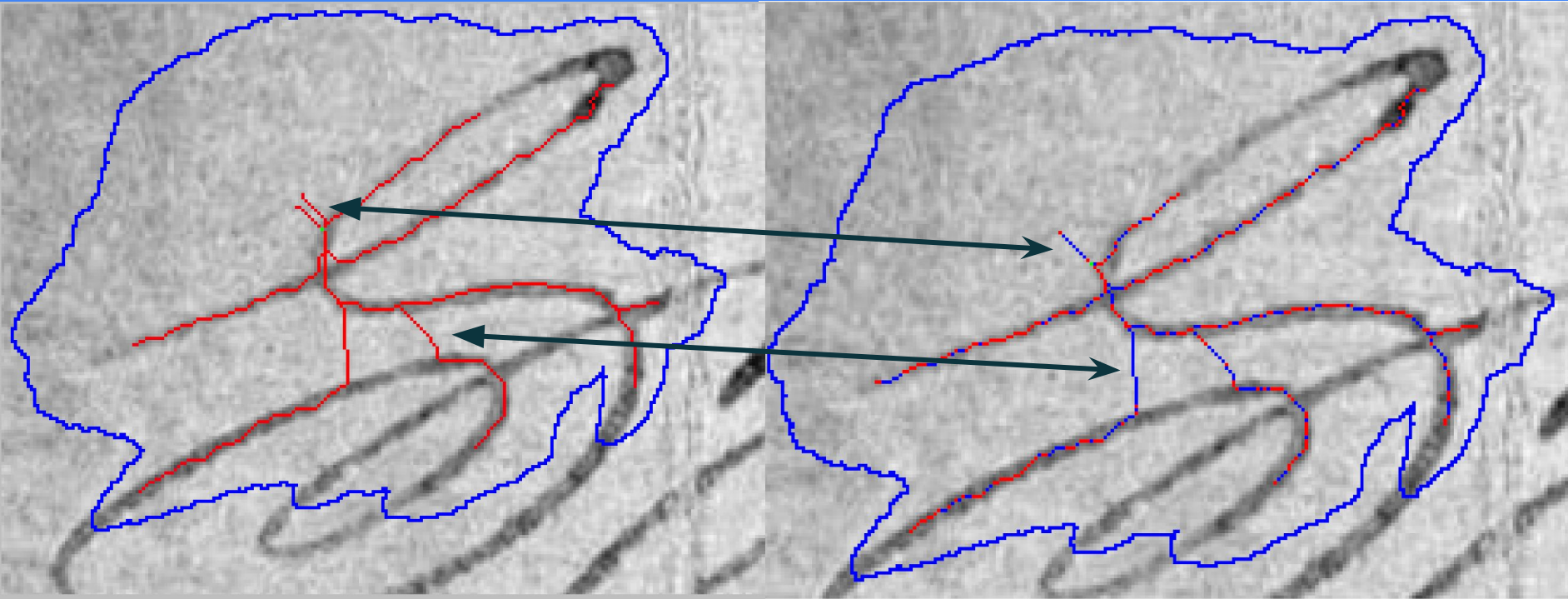


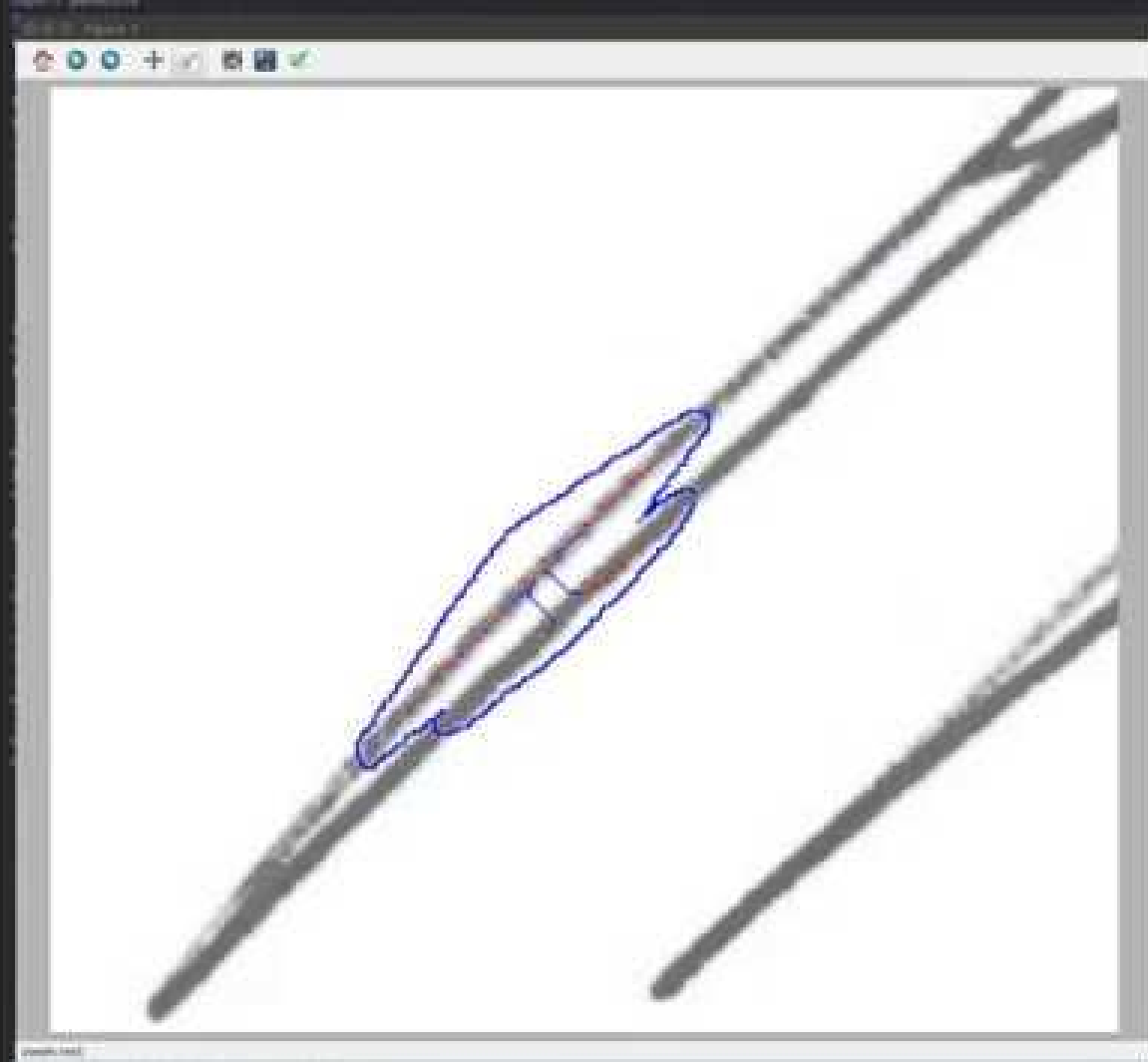


Finite Differences

- Think “edge detection on trees”
- Find the difference between the wavefront counts for two nodes
- Keep track of largest difference
- Threshold on differences

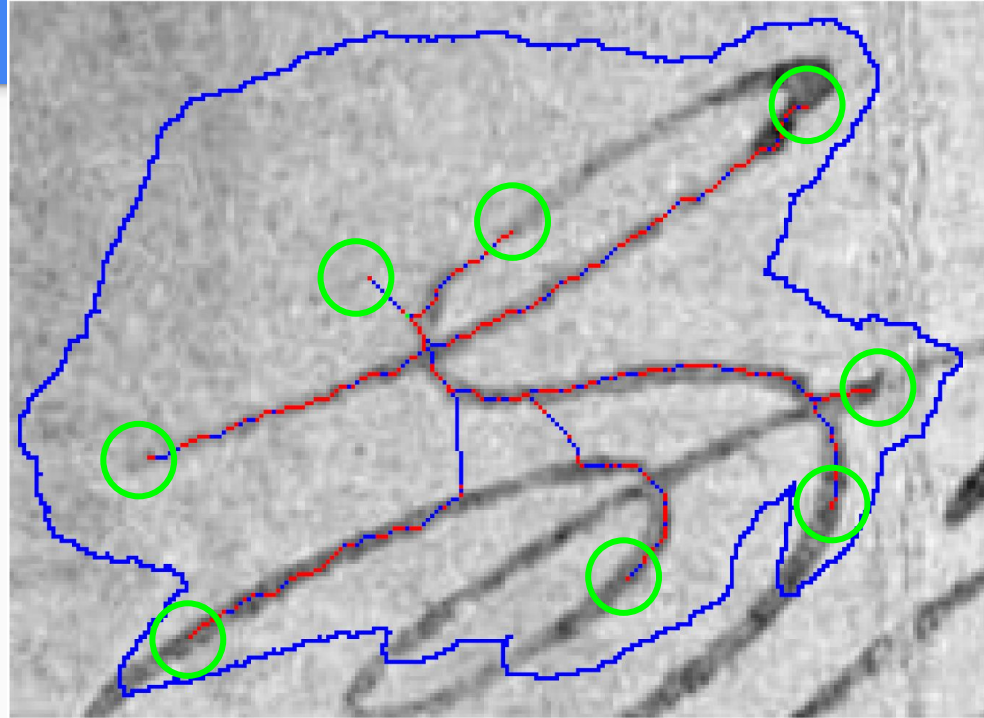






Path Cooling / New Seed

- Large wavefront are slow and error prone
- Instead, smaller wavefront
- Create new seeds at end points





A close-up photograph of a handwritten signature in purple ink. The signature is written in a cursive style and reads "D. Washington". The ink is a vibrant purple color. The signature is written on a light-colored, textured surface, possibly paper or parchment. The background of the image is black, with blue vertical bars on the left and right sides. The signature is centered horizontally and vertically within the frame.

W. H. Lupton

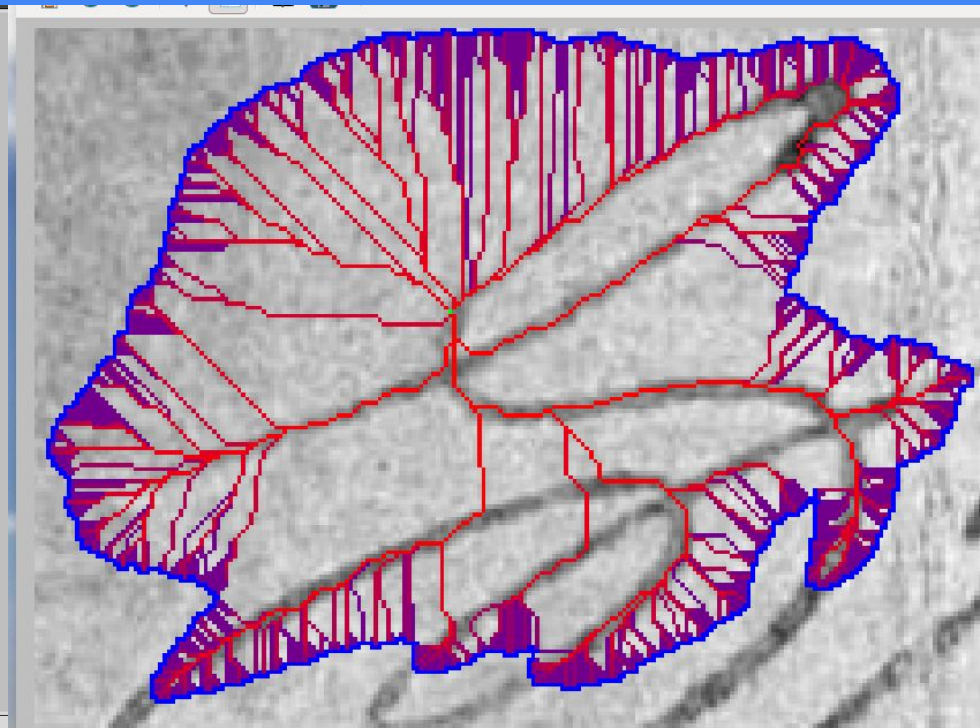
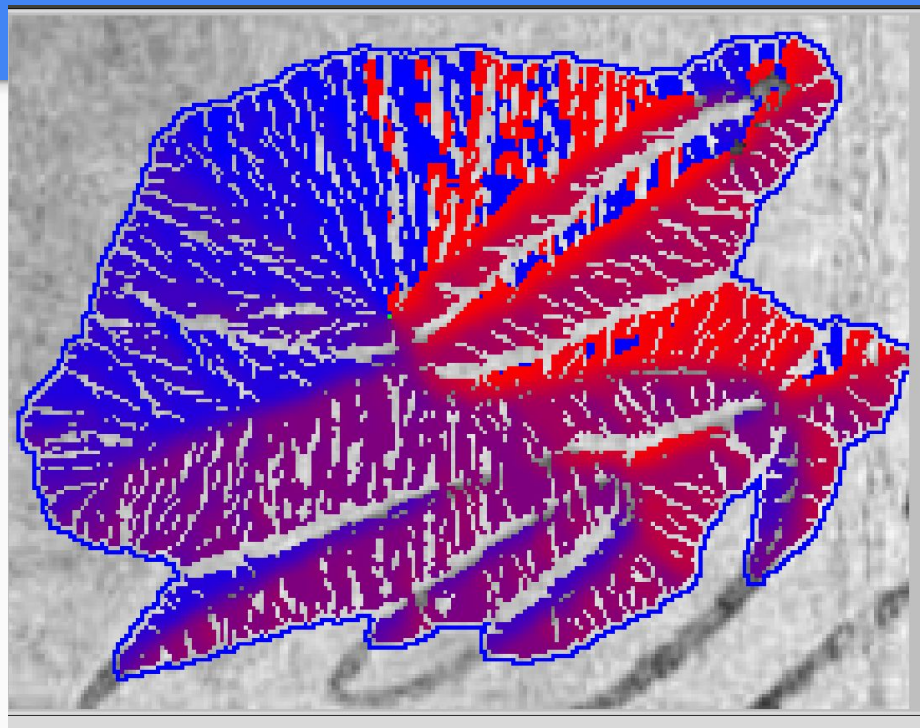
W. H. Lupton

Brooks. Martin L.

Brooks. Martin L.

Brooks. Martin L.

Future Work - Include Direction



Brooks. Martin D.

Brooks. Martin D.

Brooks. Martin D.

Thank You