Automated Plot Digitization
Ruo Yu Gu
Department of Electrical Engineering, Stanford University

Hand-drawn to Digital Plot

Objectives
- Fast
- Minimize user input
- Accepts diverse images

Actual Performance
- ~16 s runtime (desktop)
- Required input: functions
- Accepts gray/colored plots, blank/lined paper, all quadrants

Pre-Processing
- Adaptive thresholding
- Axes ID
- Projective transform
- Crop
- Infinite Thinning
- Branch pruning
- Intersection removal

Labeling
- Original
- Break Matching
- Color Matching
- Slope Matching

Fitting
- Least squares
  \( \{1,2,3\} ax + b \)
  \( \{4\} ax^2 + bx + c \)

Plotting

Experimental Results

Related Work
- Many existing data acquisition algorithms/implementations
- GetData Graph Digitizer, Engauge Digitizer, Digi-Graph…
- Manual operation, slower
- More accurate for cluttered graphs