Supplemental Material II:
Evaluation of our geometric fitting method

In this document, we show the comparisons of our geometric fitting algorithm with three other techniques as described in the article section 5.3. We show the results on 10 different curves, for 10 and 20 arcs.

10 arcs

Input sketch

Spline

Our approach

Fréchet dist. = 16.3 px
Comp. time = 11 ms

Our segmentation + [MS08]

Fréchet dist. = 77.3 px
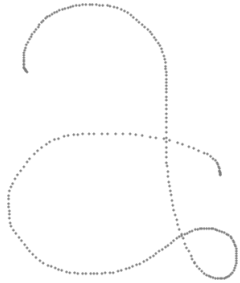Comp. time = 11 ms

Our segmentation + biarcs

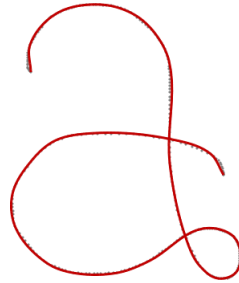Fréchet dist. = 13.5 px
Comp. time = 15 ms

Full biarcs

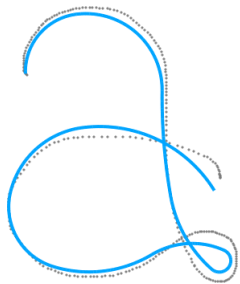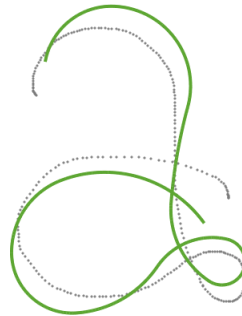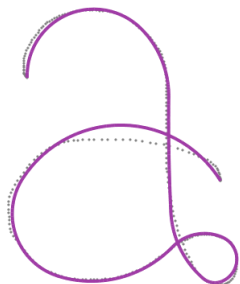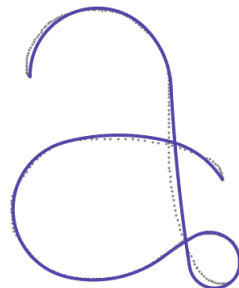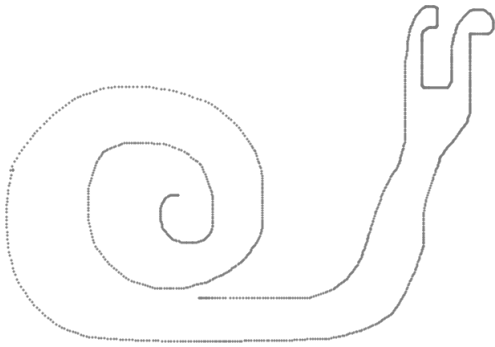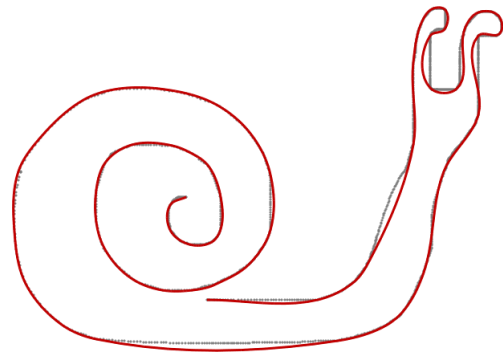Fréchet dist. = 11.5 px
Comp. time = 37399 ms

Input sketch

Spline

Our approach

Our segmentation + [MS08]

Fréchet dist. = 21 px
Comp. time = 11 ms

Fréchet dist. = 50.4 px
Comp. time = 11 ms

Our segmentation + biarcs

Full biarcs

Fréchet dist. = 18.5 px
Comp. time = 16 ms

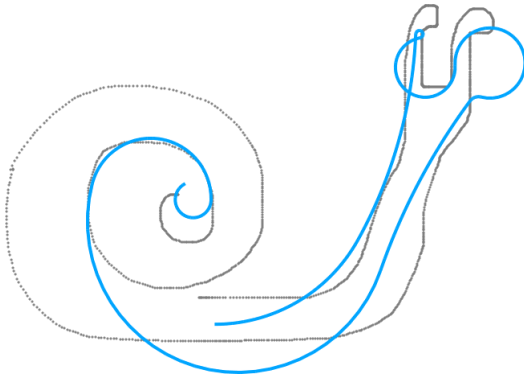Fréchet dist. = 10.7 px
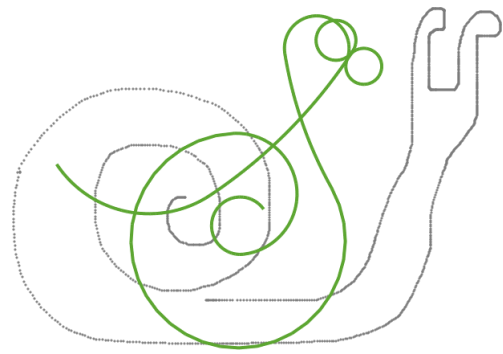Comp. time = 37396 ms

Input sketch
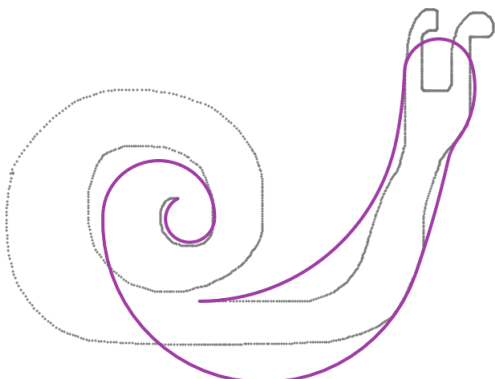
Spline

Our approach

Fréchet dist. = 112.2 px
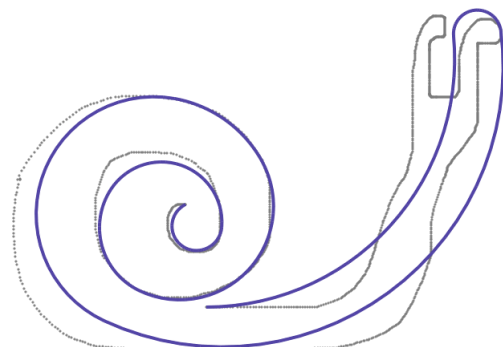Comp. time = 91 ms

Our segmentation + [MS08]

Fréchet dist. = 251.6 px
Comp. time = 92 ms

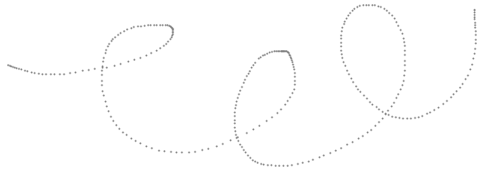**Our segmentation + biarcs**

Fréchet dist. = 122.6 px
Comp. time = 96 ms

Full biarcs
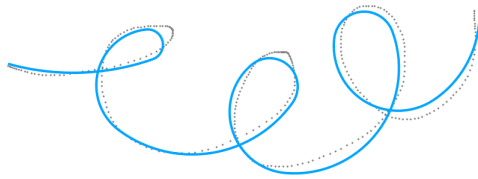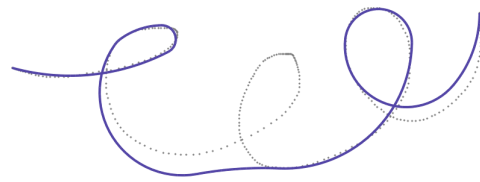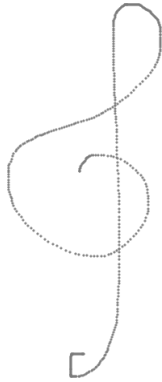
Fréchet dist. = 59 px
Comp. time = 362858 ms

Input sketch

Spline

Our approach

Our segmentation + [MS08]

Fréchet dist. = 23.1 px
Comp. time = 43 ms

Fréchet dist. = 432.3 px
Comp. time = 43 ms

Our segmentation + biarcs

Full biarcs

Fréchet dist. = 24.2 px
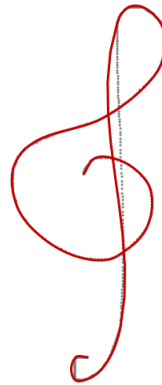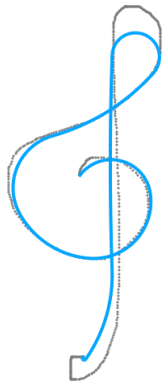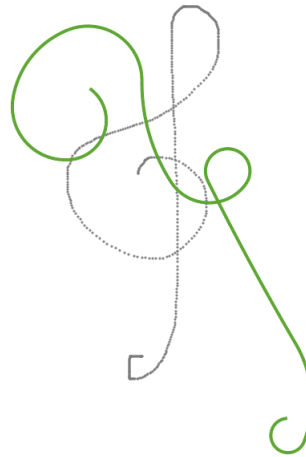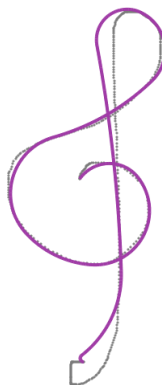Comp. time = 47 ms

Fréchet dist. = 190.2 px
Comp. time = 166836 ms

Input sketch

Spline

Our approach

Our segmentation + [MS08]
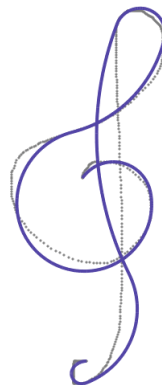
Fréchet dist. = 34 px
Comp. time = 10 ms

Fréchet dist. = 204.2 px
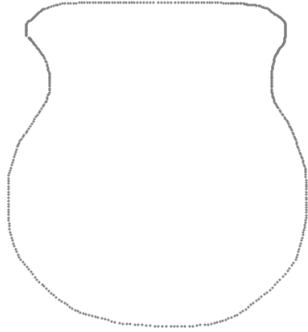Comp. time = 11 ms

Our segmentation + biarcs

Full biarcs

Fréchet dist. = 31.7 px
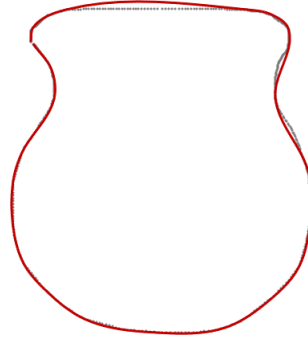Comp. time = 15 ms

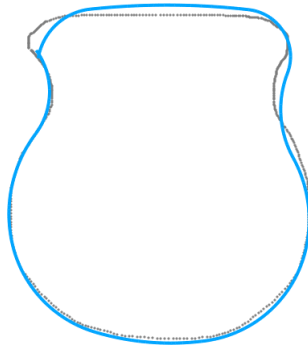Fréchet dist. = 28.5 px
Comp. time = 33163 ms

Input sketch

Spline

Our approach

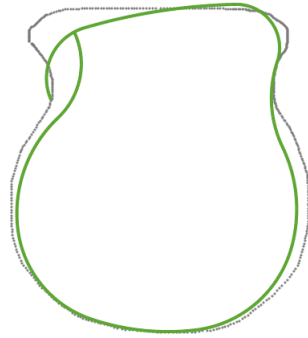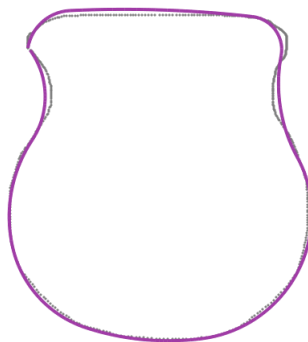**Our segmentation + [MS08]**

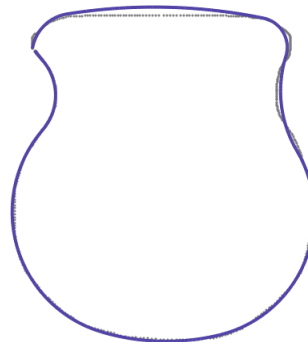Fréchet dist. = 19.3 px
Comp. time = 7 ms

Fréchet dist. = 77.1 px
Comp. time = 7 ms

Our segmentation + biarcs

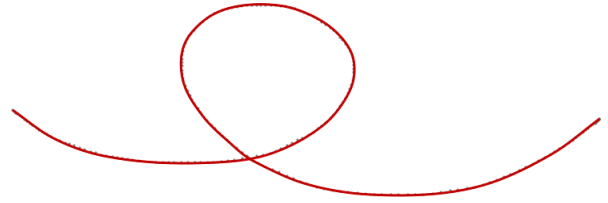**Full biarcs**

Fréchet dist. = 9.1 px
Comp. time = 11 ms

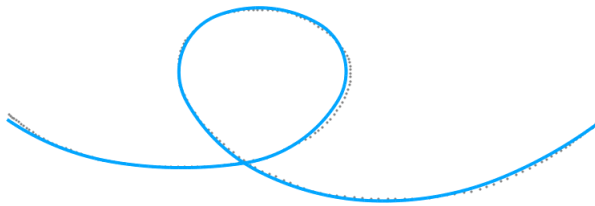Fréchet dist. = 10.8 px
Comp. time = 20621 ms

Input sketch

Spline

Our approach

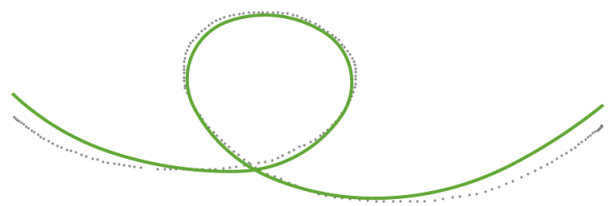**Our segmentation + [MS08]**
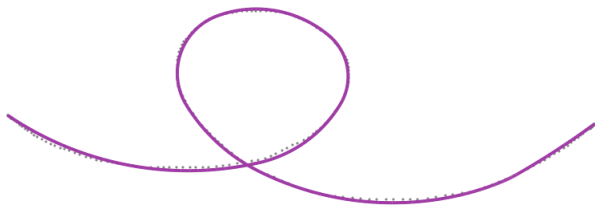
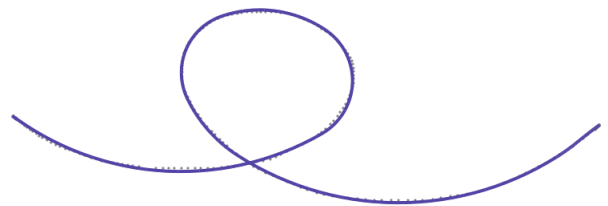Fréchet dist. = 10.1 px
Comp. time = 8 ms

Fréchet dist. = 29.3 px
Comp. time = 8 ms

Our segmentation + biarcs

Full biarcs

Fréchet dist. = 10.5 px
Comp. time = 13 ms

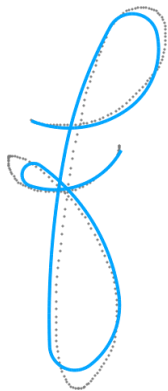Fréchet dist. = 10.1 px
Comp. time = 26523 ms

Input sketch

Spline

Our approach

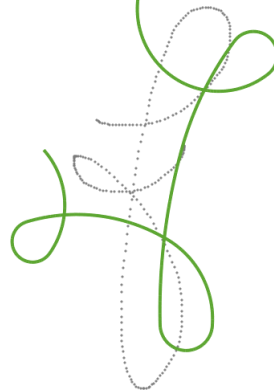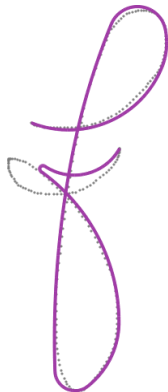**Our segmentation + [MS08]**

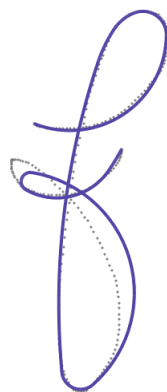Fréchet dist. = 24.3 px
Comp. time = 8 ms

Fréchet dist. = 174.9 px
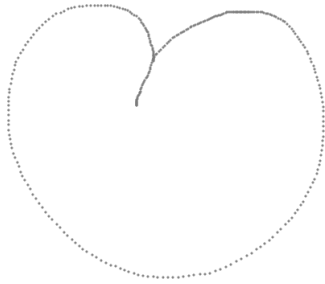Comp. time = 8 ms

Our segmentation + biarcs

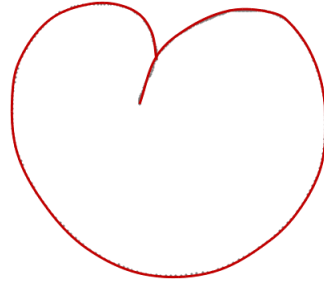**Full biarcs**

Fréchet dist. = 40 px
Comp. time = 13 ms

Fréchet dist. = 27.3 px
Comp. time = 26202 ms

Input sketch

Spline

Our approach

Our segmentation + [MS08]

Fréchet dist. = 8.7 px
Comp. time = 9 ms

Fréchet dist. = 55.7 px
Comp. time = 10 ms

Our segmentation + biarcs

Full biarcs

Fréchet dist. = 9.9 px
Comp. time = 13 ms

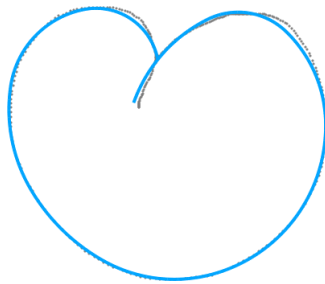Fréchet dist. = 5.2 px
Comp. time = 29960 ms
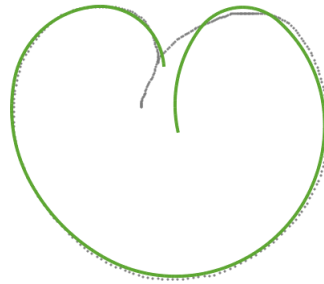
Input sketch

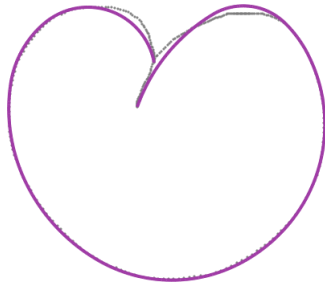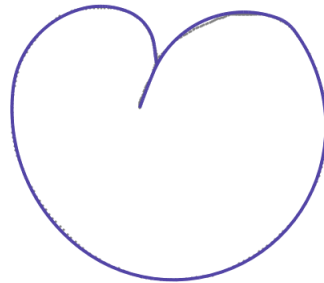**Spline**

Our approach

Fréchet dist. = 31.9 px
Comp. time = 15 ms

Our segmentation + [MS08]

Fréchet dist. = 83.1 px
Comp. time = 15 ms

Our segmentation + biarcs

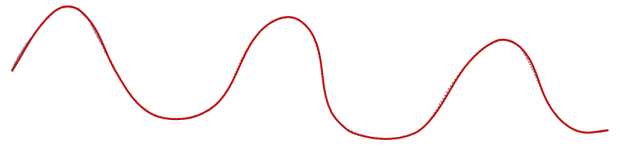Fréchet dist. = 37.3 px
Comp. time = 19 ms
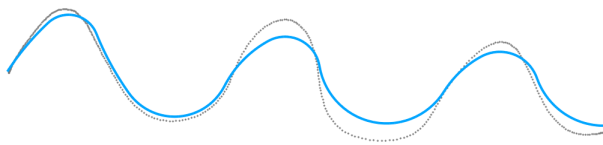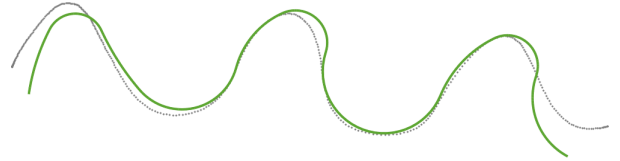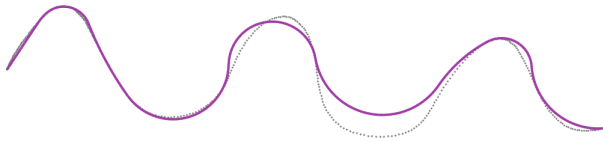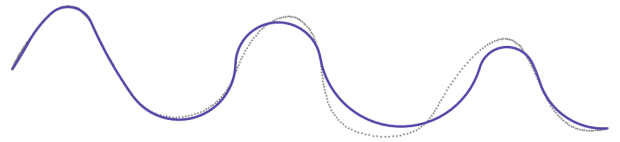
Full biarcs

Fréchet dist. = 30.9 px
Comp. time = 52913 ms

20 arcs

Input sketch

Spline

Our approach

Fréchet dist. = 6.9 px
Comp. time = 12 ms

Our segmentation + [MS08]

Fréchet dist. = 49.1 px
Comp. time = 12 ms
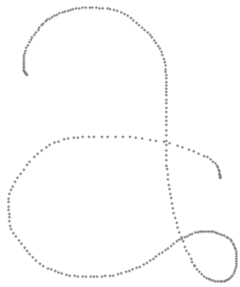
Our segmentation + biarcs

Fréchet dist. = 6.2 px
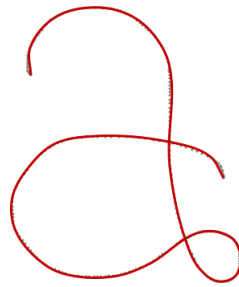Comp. time = 38 ms

Full biarcs
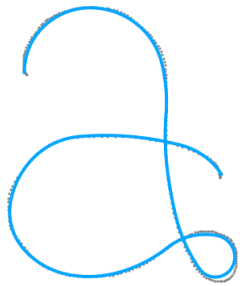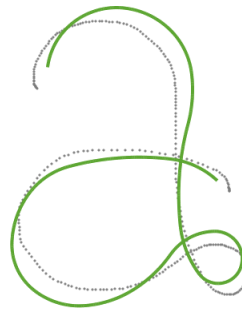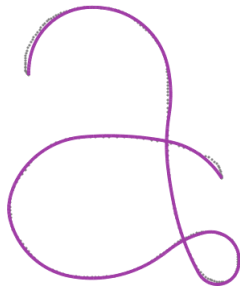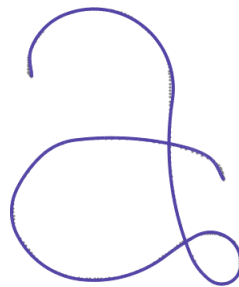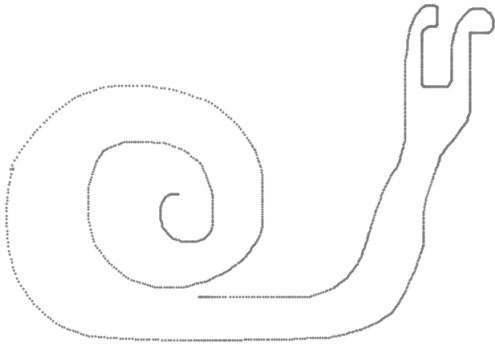

Fréchet dist. = 4.2 px
Comp. time = 37380 ms

Input sketch

Spline

Our approach

Our segmentation + [MS08]

Fréchet dist. = 7.5 px
Comp. time = 12 ms

Fréchet dist. = 29.7 px
Comp. time = 11 ms

Our segmentation + biarcs

Full biarcs

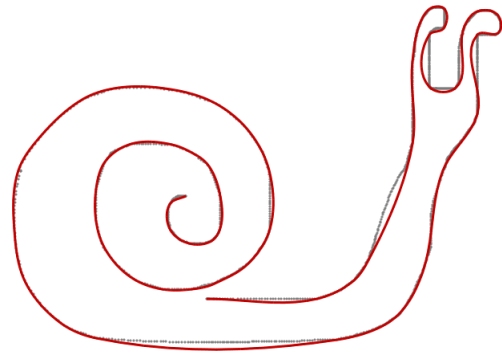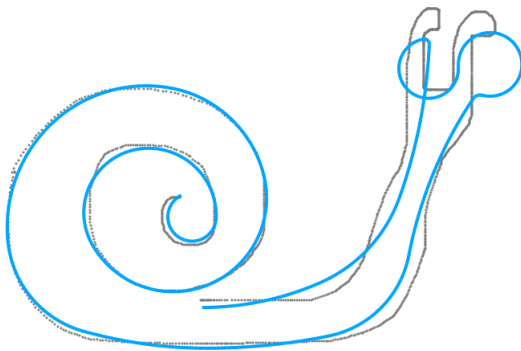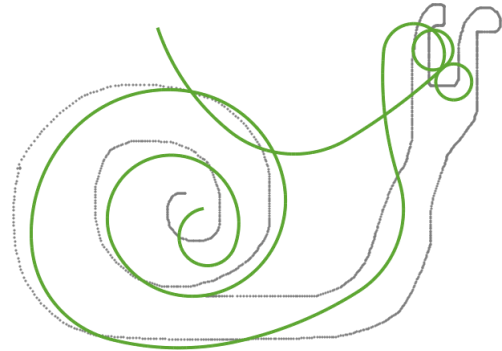Fréchet dist. = 6.3 px
Comp. time = 38 ms

Fréchet dist. = 5.3 px
Comp. time = 37401 ms
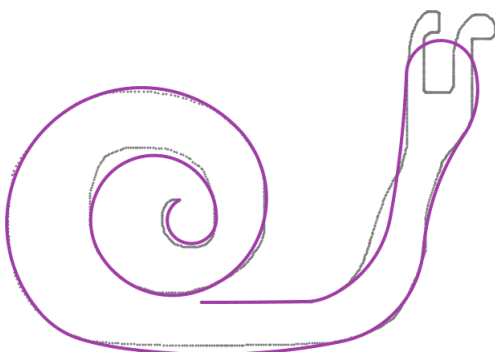
Input sketch

Spline

Our approach

Our segmentation + [MS08]

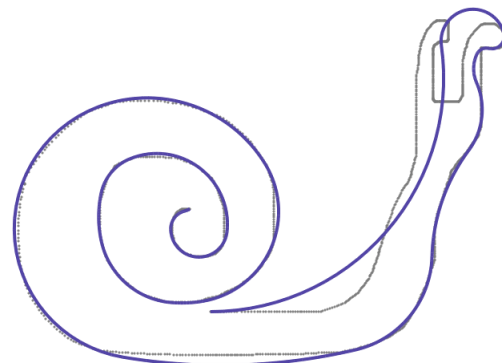Fréchet dist. = 62.5 px
Comp. time = 98 ms

Fréchet dist. = 339.6 px
Comp. time = 98 ms

Our segmentation + biarcs

Full biarcs

Fréchet dist. = 64.9 px
Comp. time = 124 ms

Fréchet dist. = 53.7 px
Comp. time = 362856 ms

Input sketch

Spline
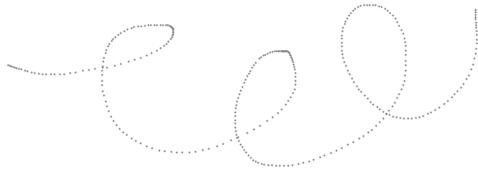
Our approach

Our segmentation + [MS08]

Fréchet dist. = 23.4 px
Comp. time = 47 ms

Fréchet dist. = 364.6 px
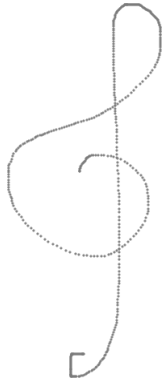Comp. time = 48 ms

Our segmentation + biarcs

Full biarcs

Fréchet dist. = 32.6 px
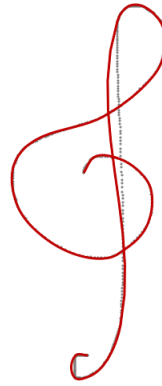Comp. time = 72 ms

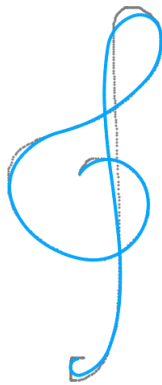Fréchet dist. = 8.4 px
Comp. time = 166845 ms

Input sketch

Spline

Our approach

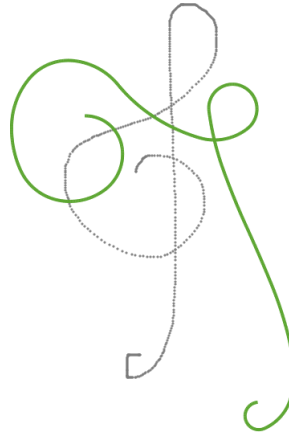**Our segmentation + [MS08]**
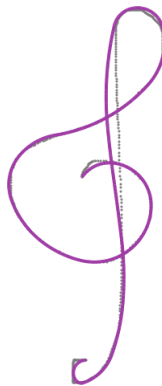
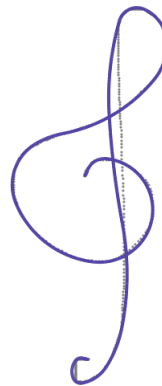Fréchet dist. = 13.6 px
Comp. time = 11 ms

Fréchet dist. = 168.6 px
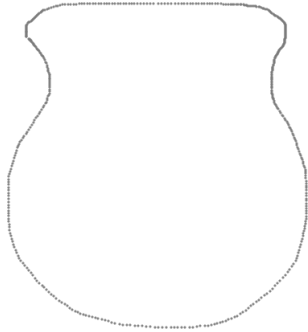Comp. time = 11 ms

Our segmentation + biarcs

Full biarcs

Fréchet dist. = 14.1 px
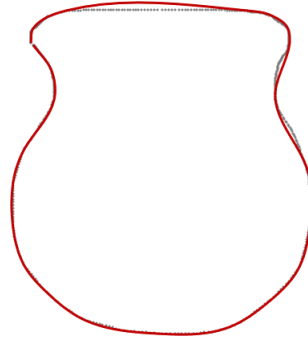Comp. time = 37 ms

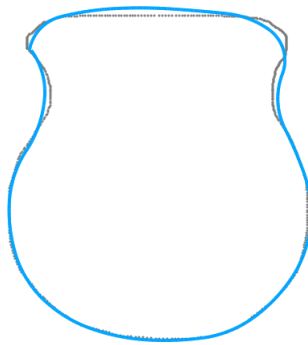Fréchet dist. = 14.2 px
Comp. time = 33444 ms

Input sketch

Spline

Our approach

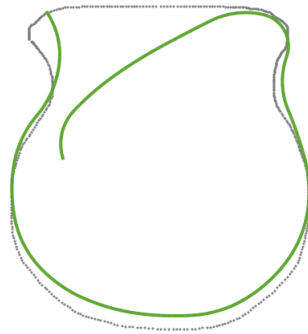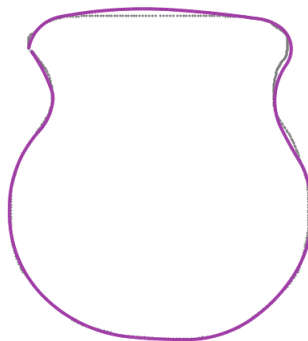**Our segmentation + [MS08]**

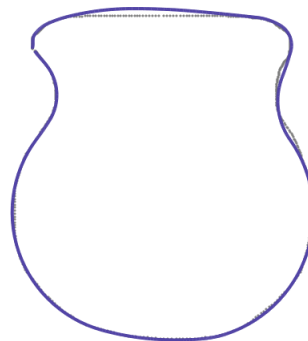Fréchet dist. = 10.5 px
Comp. time = 8 ms

Fréchet dist. = 155.9 px
Comp. time = 7 ms

Our segmentation + biarcs

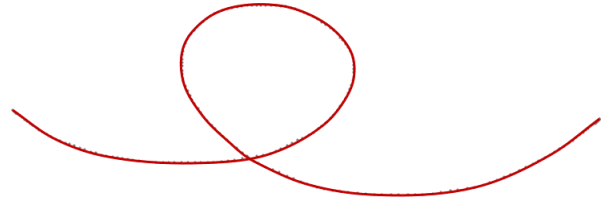**Full biarcs**

Fréchet dist. = 8.9 px
Comp. time = 33 ms

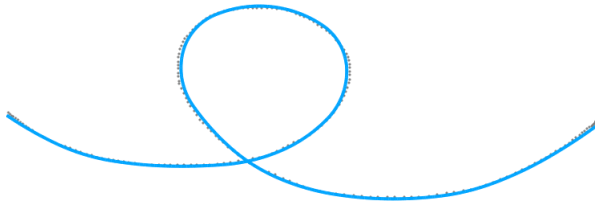Fréchet dist. = 9.1 px
Comp. time = 20550 ms

Input sketch

Spline

Our approach

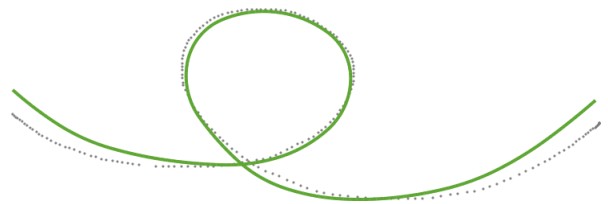**Our segmentation + [MS08]**
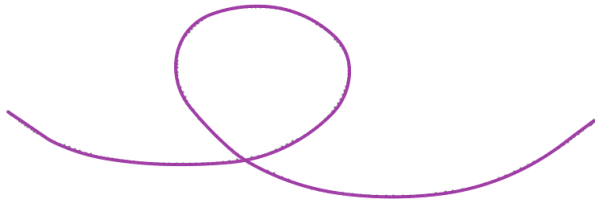
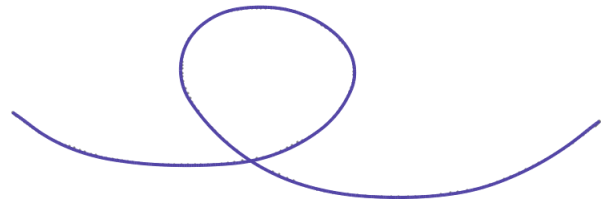Fréchet dist. = 10.4 px
Comp. time = 9 ms

Fréchet dist. = 30.1 px
Comp. time = 9 ms

Our segmentation + biarcs

Full biarcs

Fréchet dist. = 10.4 px
Comp. time = 35 ms

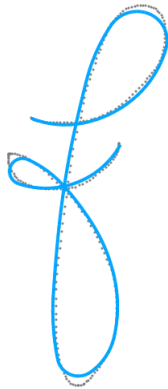Fréchet dist. = 10.5 px
Comp. time = 26284 ms

Input sketch

Spline

Our approach
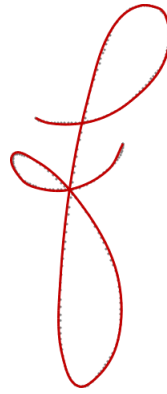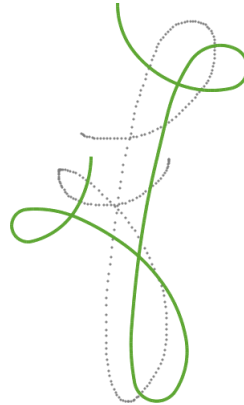
Our segmentation + [MS08]

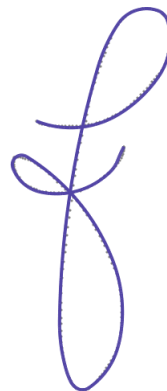

Fréchet dist. = 11.8 px
Comp. time = 9 ms

Fréchet dist. = 169 px
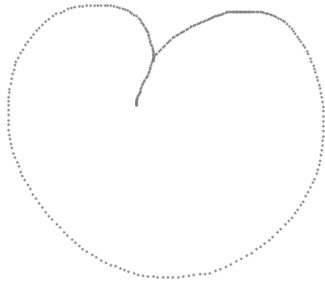Comp. time = 9 ms

Our segmentation + biarcs

Full biarcs

Fréchet dist. = 6.6 px
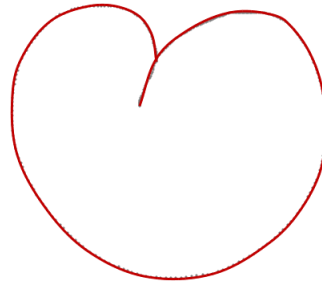Comp. time = 35 ms

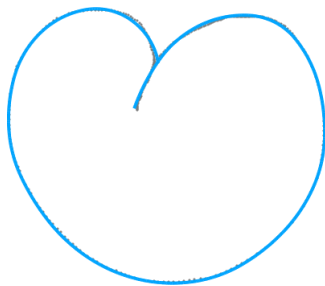Fréchet dist. = 6.6 px
Comp. time = 26203 ms

Input sketch

Spline

Our approach

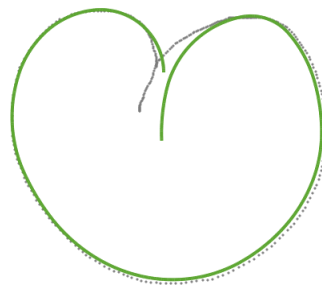**Our segmentation + [MS08]**

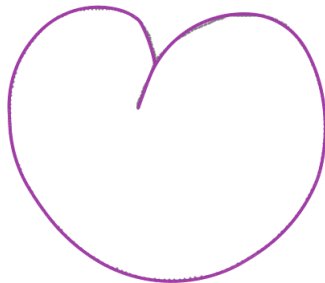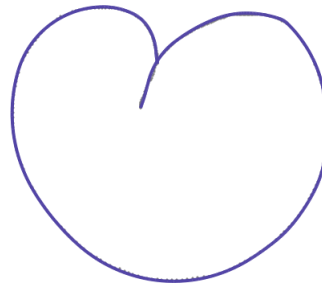Fréchet dist. = 6.2 px
Comp. time = 10 ms

Fréchet dist. = 45.8 px
Comp. time = 10 ms

Our segmentation + biarcs

Full biarcs

Fréchet dist. = 4.4 px
Comp. time = 36 ms

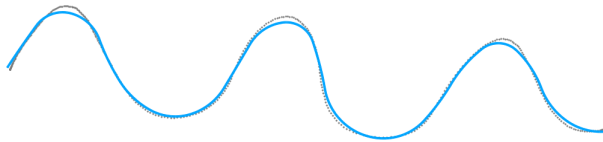Fréchet dist. = 4.5 px
Comp. time = 29961 ms

Input sketch

Spline

Our approach
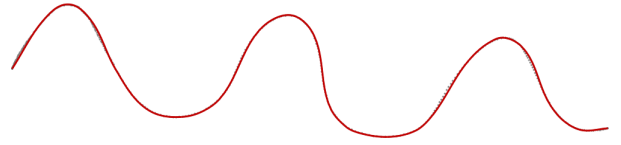
Our segmentation + [MS08]

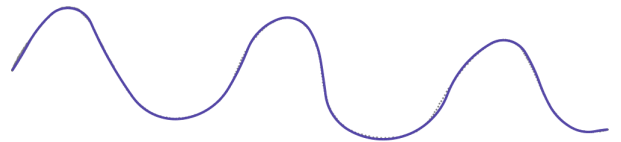Fréchet dist. = 11 px
Comp. time = 16 ms

Fréchet dist. = 62.1 px
Comp. time = 16 ms

Our segmentation + biarcs

Full biarcs

Fréchet dist. = 5.6 px
Comp. time = 44 ms

Fréchet dist. = 5.6 px
Comp. time = 53374 ms