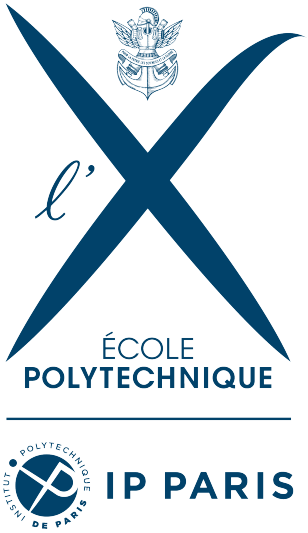
CSE306 Assignment 2

Geometry / Image Processing



June 20, 2021

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1 Introduction

During this project, I implemented the following features:

- A Voronoï diagram using Voronoï Parallel Linear Enumeration
- Sutherland-Hodgman polygon clipping algorithm
- Power diagram
- Optimizing the weights of the power diagram using LBFGS

In this report, I will mainly illustrate the rendered images after implementing each of the above features.

I have worked with Makram Loughman throughout the project especially in lab7 where the structure is somewhat similar. We also used the same test function in main to compare results.

2 Sutherland-Hodgman

2.1 subject polygon

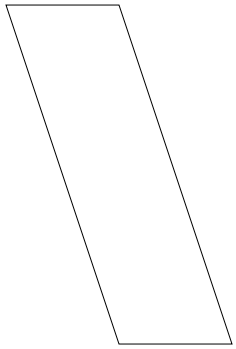

Figure 1: subject polygon

2.2 clipping polygon

Figure 2: clipping polygon

2.3 clipped polygon

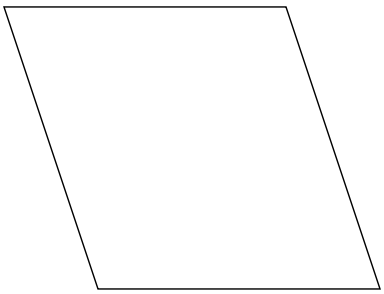

Figure 3: clipped polygon

3 Voronoi Diagram

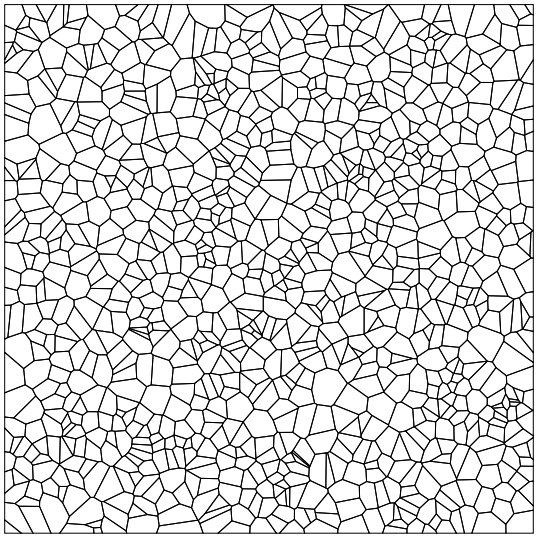

Figure 4: Voronoi Diagram

4 Voronoi Power Diagram

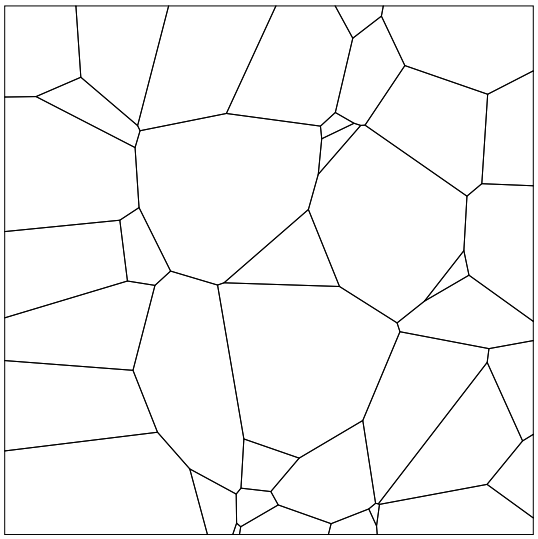

Figure 5: Voronoi Power Diagram

5 Semi Optimal Transport

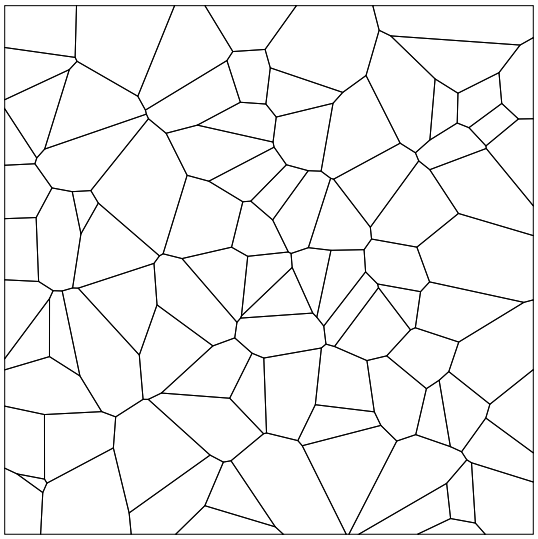

Figure 6: Semi Optimal Transport