Curvature Estimation Algorithm's Implementation

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Abstract

Several curvature estimators along digital contours were proposed. In this paper, we show the implementation of *Osculating Circles Estimator* and *Binomial Convolution Curvature Estimator*. After that is an approach to parallel the calculations on GPU.

1 INTRODUCTION

In the last lesson of Formal Design, we were given a project to finish individually. Our job is to design a sorted array in ascending order, and a method to confirm if one array is sorted.

I used a software, named **Rodin**, to do this project. There were three steps needed in this project

- Definition of an array
- Specification of a machine that will evaluate an array to see if it's sorted in ascending order
- Implementation of the machine

2 DGTal Library

In this project, we used DGtal for image and contour's realization. DGtal library is a project aimed at developing generic, efficient and reliable digital geometry data structures, algorithms and tools. This project is made by the cooperation between LIRIS, LAMA, LORIA, GREYC and IRCCyN.

3 CONCLUSION

After finishing this project, I have obtained many knowledge, first of all, is the usage of *Rodin* and the way to define a system in a logical way. I have to think about the problems that I have never thought about before when programming. And most importantly, is that I could find out that all my knowledges about boolean algebra are still useful, and it could contribute to build a system in a clear and logical way.