+55 11 97037-3867
+55 11 2533-5147
matt@ime.usp.br
github.com/mlordx

Mateus Barros Rodrigues

Education

Feb 2017 - Jul 2019 **Master's Degree in Computer Science**, *Project Title: "Geometric shortest path problems"*, IME-USP.
- **Description:** I am currently studying several algorithms for the classical geometric single source shortest path problem inside simple polygons, where given a source vertex we would like to find the shortest path from it to every other vertex without violating the boundary of the polygon.
- **Teaching Assistant Work:** Introduction to Computer Science (2018/1) and Algorithms and Data Structures II (2017/2).

Mar 2012 - Dec 2016 **Bachelor's Degree in Computer Science**, IME-USP.
- **Teaching Assistant Work:** Introduction to Computer Science (2015/1) and Principles of Algorithm Design (2015/2).

Projects

Mar 2016 - Dec 2016 **Window-Segment Intersection Queries**, *Undergraduate Thesis*, IME-USP.
- Implemented and wrote a monograph about a computational geometry algorithm to quickly find all line segments intersecting with a given rectangular window.
- Required the study of data structures such as "Segment Tree" and "Layered Range Tree" and many point location algorithms.
- The source code is entirely available at: linux.ime.usp.br/~mlord/mac0499.

Mar 2015 - Jul 2015 **Teaching Assistant Management System**, *Contributed to the development of the TA Managing Website*, IME-USP.
- Helped develop the management system for TAs while undertaking "Extreme Programming Lab" course.
- Implementation was mostly done using *Ruby on Rails* and followed agile development practices.
- Developed features such as integration with USP's official undergraduate management system and the automatization of related documents. Code is available at: github.com/monitoria-imeusp/

Aug 2014 - Dec 2014 **4-Approximation Algorithm for Convex Decomposition of a Simple Polygon**, *Computational Geometry Algorithm Implementation.*, IME-USP.
- Implementation of Hertel and Mehlhorn's algorithm while undertaking "Computational Geometry" course.
- Required the study of structures such as "Red-Black Binary Tree" and the "Winged Edge structure" and other algorithms such as the triangulation of monotone polygons.
- The source code is entirely available at github.com/mlordx/mac0331.

Extra-curricular Activities

Apr 2014 - Apr 2016 **Organization of the Computer Science Week (Encontro do BCC)**, IME-USP.
- Participated as one of the organizers in IME-USP's Computer Science Week (Encontro do BCC)
- Surveyed student's topics of interest, helped to arrange accomodations and transportation for speakers, among other event-managing tasks.
- Webpage of the event: bcc.ime.usp.br/encontro.