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EDUCATION

2008-2011 B.S, Université du Québec à Chicoutimi

2011-2013 M.S, Université du Québec à Chicoutimi

Algorithmes pour l'arbre couvrant minimal

This master thesis empirically compares various ways of implementing minimum spanning trees. Several data structures and algorithms are implemented in C++ and measured: Union-Find, Binary heap, Fibonacci heap, Prim's Algorithm, Boruvka's Algorithm, Kruskal's Algorithm.

2013-2021 PhD, Université du Québec à Chicoutimi

Extended Combinatorial Testing using Graph Algorithms and Apache Spark

This thesis presents a generalization of t-way testing, reductions to graph coloring and vertex cover problems and distributed algorithms using Apache Spark. Experimental results were obtained using computer clusters provided by Compute Canada.

WORK HISTORY

2015-2021 - Chargé de cours, Université du Québec à Chicoutimi

Classes taught:

2015-2021 | 8INF803 (Distributed Databases)

In 8INF803, students learn about distributed databases, crawling and distributed data processing. On the technical side, we mostly use Apache Spark, Scala and Python. We also show how to implement iterative algorithms with proper memory management and checkpointing.

2015 | 8GIF128 (Web programming)

In 8GIF128, we teach HTML, CSS, Javascript, DOM, REST and WebSockets. The final project is a website with several services, with WebSocket communication.

SKILLS

Favorite Programming Languages:

Scala, Modern C++, Java, C

Writing:

Latex, HTML/CSS

Favorite tools:

VsCode, PowerPoint, MSWord, SumatraPDF, yedEditor, mouseWithoutBorders, IntelliJ IDE

PUBLICATIONS

Extended Combinatorial Test Generation using Graph Reductions. Submitted in Software Testing, Verification and Reliability, March 2020, under review.

Graph Methods for Generating Test Cases with Universal and Existential Constraints. Springer Lecture Notes in Computer Science Volume 9447 (pp. 55–70).