

**Tristram Gräbener**

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# PhD Engineer in Operation Research

## Academic education

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2007-2010	<b>PhD in Computer Science</b> <i>University of Toulouse, Research Institute in Computer Science of Toulouse (IRIT)</i> Thesis defended the 15th of November 2010
2006-2007	<b>Master degree, major in Decision Systems (SAD)</b> <i>Faculty of sciences, University of Nantes</i>
2003-2007	<b>Engineering degree, major in Decision Systems (GIPAD)</b> <i>École des Mines de Nantes</i>
2002-2003	<b>Mathematics preparatory school</b> <i>Lycée Charlemagne, Paris</i>
2002	<b>Scientific A-Level (With distinctions)</b> <i>Lycée Français de Tananarive, Madagascar</i>

## Technical skills

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Combinatorial optimization	Graph algorithms (mostly shortest path), mixed integer linear programming, meta heuristics, constraint programming, multiobjective optimization
G.I.S.	uDig, QGIS, postGIS, various OpenStreetMap tools
Programming	Advanced C++, Python, Ruby, Javascript, Rust

## Professional experiences

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2013-Present	<i>Software engineer</i> <b>Capitaine Train</b> Paris Capitaine Train is a startup that wants to disrupt the train ticket distribution market Main developper of the routing engine to find the best combination with many carriers Technologies: C++, Ruby
2010-2013	<i>Software engineer</i> <b>Canal TP</b> Paris Canal TP is the leader in France for public transport information (route computation, real time delays,...) Technical architect and lead developper for a complete rewrite of the existing application from Delphi to C++ (300k lines) Technologies: C++, Template Metaprogramming, FastCGI, ISAPI
2007-2010	<i>PhD in Computer Science</i> <b>Research Institute in Computer Science of Toulouse (IRIT)</b> <i>Multicriteria and multimodal shortest path computation</i> In order to suggest multiples choices combining cycling, public transport, walking or driving, we compute a set of <i>Pareto optimal</i> paths. The algorithms have been tested on larger cities as Los Angeles with up to four criterions. Development in C++ and Python with a web user interface. Source code: <a href="https://github.com/Tristramg/mumoro/">https://github.com/Tristramg/mumoro/</a> Founded by the region Midi-Pyrénées and the company SODIT

## Professional experiences (continuation)

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2007-2008	<i>Developpement of a route planer for firefighters</i> <b>Sodit</b> Toulouse Within of the project FILONAS, a development route planer suited to the needs of fire-fighters' trucks. It considers real-time traffic data and allows to forbid some streets too narrow for the trucks and to selectively ignore traffic regulations.
2007 (6 months)	<i>Master thesis</i> <b>Ange Optimization</b> Copenhagen, Denmark Supervised by Sophie Demasse Design of a container vessels transportation network Container vessels follow regular routes. The goal of the master thesis was to design a tool to compute those routes in order to fulfill demand and minimize costs. Solving by linear programming with column generation (Coin-OR and C++)
2006 (4 months)	<i>Engineering internship</i> <b>Nokia Research Center</b> Helsinki, Finland Development of a prototype to save contextual informations on a mobile phone. Technologies: J2ME, C++, Ruby on Rails

## Teaching and supervising

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2012	<i>Supervision of a master thesis project</i> (6 months) The fastest route in public transport is not always the best route. Travellers want a stable route (same route at 8:00 and 9:00) or the most reliable (low risk to be late)
2010	<i>Supervision of a bachelor student internship</i> (4 months) Creation of a web demonstration tool for multimodal routing Use of public data and developpment of tools to merge heterogeneous data Technologies : Javascript, Python, AJAX, postGIS
2007-2010	<i>Teaching Assistant</i> Université Toulouse 1 Capitole Databases (60 hours) Introduction to computer science for students in social sciences (132 hours)
2009	<i>Supervision of a group of three master students</i> Route computation on mobile phone

## Languages

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French	Native: over twenty years in French speaking countries and schools
German	Native: father tongue
Spanish	Native: mother tongue
English	Fluent: 7,5/9 at the IELTS exam <i>Good User</i> (6 required for studying in the UK) Working language during 10 months in Finland and Denmark
Danish	Spoken, read, written: module 3/6 (5 required for the Danish citizenship)

## Hobbies and interests

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Cycling	Daily use and travelling
Capoeira	Five years of regular training
Languages	Introduction to various languages (Finnish, Japanese, Esperanto,...)
Environment	Strong interest in energy and transportation related issues