David Salinas

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French Nationality

Research Experience

2013–now **Post Doc at Inria**, *Sophia Antipolis*, France.
- Coherent simplification of huge 3D models of cities (∼6M vertices). Implementation in `C++`.
- Active developer of Gudhi open-source library:
  - Implementation of a data-structure for representing high-dimensional triangulations in `C++`.
  - Simplification performs 65% faster compared to the open-source library `CGAL` in the 3D case.
- One publication in the CGF journal.

2010–2013 **PhD in Computer Science at Gipsa-lab**, *Grenoble*, France.
Design and implementation of algorithms for approximating high-dimensional shapes in `C++`.
- Designed a data-structure to store and simplify high-dimensional shapes.
- Proved that the Rips complex, an approximation for shape used in topological data analysis, has the same topology as the shape itself.
- Two publications in the conference SoCG, one in the journal IJCGA and one in the journal CGTA.

2009 **Research internship**, *Hiroshima University*, Japan.
- Designed a 1-dimensional reversible universal cellular automaton.

2008 **Research internship at Verimag**, *Grenoble*, France.
- Designed and implemented an algorithm to simulate non-linear hybrid dynamical systems in `C++`.
- One publication in the conference CAV.

Education

2010–2013 **PhD in Computer Science at Gipsa-lab**, *Grenoble*, France.

2007–2010 **BSc and MSc at Ecole Normale Supérieure de Lyon and Nice University**, *Lyon and Nice*, France, Computer Science department.

2006–2007 **Engineering School ENSEEIHT**, *Toulouse*, France, Computer Science department.

2004–2006 **Preparatory Classes - Math and Physics at Lycée Berthollet**, *Annecy*, France.

Teaching

2010–2013 **Graduate Teaching Assistant at the Engineering School INPG**, *Grenoble*, France.
Probability and Statistics, Operating Systems and Parallel Programming, `Java` and Image Processing.

Technical skills

- Strong knowledge of `C++` (5 years experience). Previous use of `Java`, `Python`, `OCaml`, `Matlab`.
- Commonly used libraries: `Boost`, `CGAL`, `Qt`. Previous experience: `OpenMP`, `Swing`, `PCL`.
- Ability to design complex algorithms and data-structures.
- Experience developing cross-platform projects on `Linux`, `OSX` and `Windows`.

Recent Programming Projects

- Eco-friendly and homemade distributed file system using several Raspberry Pi.
- Software for 3D mesh simplification in `C++`.
- Implementation of the board game “Settlers of Catan” in `Java`.

Source code and publications are available on my website