

Ioana-Maria ILEANA

R&D Software Engineer &

Researcher in Computer Science

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EDUCATION

- 2011 - 2014 **PhD, Télécom ParisTech** (Paris, Fr)
- Thesis «Query rewriting using views: a theoretical and practical perspective», defended on Oct 24th 2014, Mention Très Honorable
- 2004 - 2005 **Master's degree, Master Parisien de Recherche Informatique** (Paris, Fr)
- 2001 - 2004 **Engineer's degree (Computer Science), École Polytechnique** (Palaiseau, Fr)
- Member of the École Polytechnique team for the international ACM programming contest
- 2001 - 2005 **Bachelor in Sociology, «1 Decembrie 1918» University** (Alba Iulia, Ro)
- 2000 - 2002 **«Politehnica» University** (Bucharest, Ro)
- 1996 - 2000 **«Horia Closca si Crisan» Highschool** (Alba Iulia, Ro)
- Awards in regional and national Computer Science and Mathematics Olympiads
 - **Silver Medal, Central European Olympiad in Informatics (CEOI), 2000**
 - **3rd prize in Computer Science, Tuymaada International Science Olympiad, 1998**
 - Member of Romania's selected team for the international Computer Science Olympiads (1996 – 2000)

PROFESSIONAL EXPERIENCE

- 12/2014- now **Post-doctoral Researcher, INRIA Saclay / UCSD**
- Work on the Estocada system, a multi-storage and multi-model architecture
- 10/2011-10/2014 **PhD Student / Research and Teaching Assistant, Télécom ParisTech**
- Research on a wide range of topics concerning query speed-up and optimization. Focus on query rewriting using views, in relational and XML settings. Strong interest for theoretical issues (soundness and completeness, complexity and tractability), complemented by a strong practical motivation and an interest for efficient and optimized implementations.
 - Main research result: the Provenance-Aware Chase & Backchase algorithm (SIGMOD 2014) for computing minimal query reformulations under constraints, allowing up to two orders of magnitude speed-up compared to a commercial DBMS. Beyond the immediate practical gains, the Provenance-Aware Chase is a means of reasoning about the interaction between provenance and constraints, opening the way for a wide range of theoretical developments.
 - TA: Operating systems/C language, Java, Databases, Web Data Management, TinyBase project.
 - **Award: 2nd place, ACM SIGMOD Programming Contest, 2012:** multi-dimensional indexing algorithm, in a transactional and multi-thread setting; 5 to 10 times faster than the reference solution built on Berkeley DB; advanced code optimization (cache, locking, NUMA).

- 06/2010-10/2011 **Senior Software Engineer, Mobipocket.com / Amazon**
- *Design and development of features (layout, reflow) in the Kindle Reader SDK, the Kindle Reader infrastructure (cross-platform) layer.*
 - *In charge of projects for cross-platform porting of the rendering engine (iOS, Android).*
- 01/2010-06/2010 **R&D Engineer, Twenga**
- *Research and development work focused on integrating images in the product search engine: image descriptors, image similarity, image indexing.*
- 09/2005-12/2009 **R&D Engineer, Dassault Systèmes**
- *Full research and development cycle of the 3DSearch/Indexing framework: design, prototyping, industrialization, tests, extensions; work spanning core algorithmic issues, server, client and GUI development, project management, team lead*
 - *Research work focused on indexing techniques for 3D volume/proximity/server-side ray-tracing queries; descriptors, measures and indexing for 3D search-by-similarity queries; mixed indexing strategies (incorporating spatial features, text, structure)*
 - *Design and development of a general multiprocess/parallelization framework aimed at improving GUI performance and interactivity in Dassault Systèmes products*
 - *Awards: Dassault Systèmes Innovation Forward 2007, 2008*
- 03/2005-08/2005 **MPRI Internship, Dassault Systèmes**
- *Research, design and prototyping of 3D indexing and search techniques*
- 09/2004-09/2005 **Tutoring in Computer Science, École Polytechnique**
- *General algorithmics, data structures and programming topics*
- 04/2004-08/2004 **3rd year Internship, France Télécom**
- *Design and prototyping of an incremental multi-thread Garbage Collector for embedded systems.*

THEORETICAL CS BACKGROUND

- Main: databases and query reformulation/rewriting, indexing (multi-dimensional and in particular 3D, text, XML, mixed indexing strategies)
- Also: web wrappers, garbage collectors, image processing, pattern recognition, graphs
- Good general skills and strong interest in algorithmics

TECHNICAL SKILLS

- Main: C/C++ (10 years of experience), Java
- Also: SQL, XPath/XQuery, Bash, Objective C, JavaScript, Python, HTML, Latex, IDEs (Eclipse, Visual Studio, XCode, CodeBlocks), DB2 and ORACLE, profiling tools (ranging from JProfiler to VTune), testing tools
- Good general technical skills and passion for coding
- I am at ease working with large code bases and industrial development processes. I work and code mainly on Linux. I support Open Source solutions.

LANGUAGES: Romanian (native), French (bilingual), English (fluent), Italian (beginner)