Ildar Absalyamov

| CONTACT INFORMATION | University of California, Riverside
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RESEARCH INTERESTS

Database management systems, Big Data, Distributed Systems

EDUCATION

University of California, Riverside — Riverside, CA
PhD candidate, Computer Science — *September 2012 - present*
Advisor: Dr. Vassilis Tsotras
GPA: 3.88/4.0

Ufa State Aviation Technical University — Ufa, Russia
Specialist (M.Sc. Equivalent), Computer Science — *September 2006 - July 2011*
GPA: 4.96/5.0, Graduated with honors

PUBLICATIONS

- Robert J Halstead, Ildar Absalyamov, Walid Najjar and Vassilis J Tsotras. **"FPGA-based Multithreading for In-Memory Hash Joins"**, in *Proceedings of 7th Biennial Conference on Innovative Data Systems Research (CIDR)*, 2015
- Roger Moussalli, Ildar Absalyamov, Marcos Vieira, Walid Najjar and Vassilis J Tsotras. **"High performance FPGA and GPU complex pattern matching over spatio-temporal streams"**, in *GeoInformatica*, 2014.
- Ildar Absalyamov, Roger Moussalli, Walid Najjar, Vassilis J Tsotras. **"High-Performance Holistic XML Twig Filtering Using GPUs"**, *in Proceedings of 4th International Workshop on Accelerating Data Management Systems (ADMS)*, 2013.

PROFESSIONAL AND RESEARCH EXPERIENCE

University of California, Riverside — Riverside, CA
Graduate research and teaching assistant — *May 2013 - present*
Research projects:

- **AsterixDB BDMS (Big Data Management System)**
  Contributed to design and implementation of AsterixDB - open source database management system.
  Responsibilities:
  - Extended Asterix to accelerate semistructured data querying by indexing optional fields and exposing these indexes to database optimizer.
  - Designed scalable dataset statistics collection framework.

- **Accelerating database applications on modern multithreaded hardware architectures**
  Responsibilities:
  - Implemented and evaluated performance of in-memory hash join and aggregation operators on modern parallel (multi-core CPUs, FPGAs) architectures (resulted in CIDR'15 publication).
  - Developed massively parallel algorithm, implementing trajectory pattern matching over spatio-temporal stream data on GPUs (resulted in GeoInformatica'14 publication).
  - Implemented first holistic massively parallel algorithm, performing XPath filtering of XML documents on GPUs. Evaluated performance and demonstrated 4x-9x speedup over state-of-the-art software XML filtering approaches (resulted in ADMS'13 publication).

Inforbix LLC (http://inforbix.com)   Magnitogorsk, Russia
Java Software Engineer   *August 2011 - August 2012*
Participated in development of an enterprise search system for manufacturing companies. Inforbix search engine (later acquired by Autodesk) was using semantic relationships to find similarities in different types of files (AutoCAD, SolidWorks, Excel, etc) and linking them using semantic ontologies.
Responsibilities:
- Developed modules of semantic search engine.
- Designed and developed RESTful multi-tenant backend service architecture.
- Developed distributed performance metric collection tool.

Technical University of Dresden   Dresden, Germany
Exchange Student   *February 2011 - August 2011*
Advisors: Dr. Christof Fetzer and André Martin

Carried out research project aimed to build an Amazon S3 compatible distributed file storage system, based on Apache Cassandra.
Responsibilities:
- Devised and developed distributed file system engine, implementing incremental backup and partial update features.
- Implemented distributed application architecture, tolerant to individual node failures.
- Implemented RESTful API, emulating standard Amazon S3 API.
- Researched and developed new replica placement and data partitioning strategies for Apache Cassandra.

I.T. Co. (http://it.ru)   Ufa, Russia
Java Software Developer   *February, 2010 - February, 2011*
Implemented server modules for electronic document management system managing business and document workflows of Federal Financial Markets Service of Russia.
Responsibilities:
- Designed and implemented jBPM-based document management module.
- Created business process workflows.
- Developed web services, business logic and data access layer server modules.
- Developed ESB-services for web service orchestration.

| Honors and Awards | Dean's Distinguished Fellowship | University of California, Riverside, 2012 |
| | Erasmus Mundus Multic Scholarship | Technical University of Dresden, 2011 |

Technical Skills
- Programming languages:
    - Java: Core API, JavaEE, Web-services, JBoss, Tomcat, Maven, Eclipse.
    - C/C++, Python, SQL
- Databases: MySQL, Cassandra
- Tools: Git, LaTeX, standard Unix/Linux system tools