Ivo Jimenez

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Overview

2nd year PhD student at the UCSC Computer Science Department. I'm a member of the Database Group, advised by Professor Neoklis Polyzotis. Currently, I'm a collaborator of the *DBTune* project, investigating autonomous physical design techniques.

Education

- B.S. Computer Science, Universidad de Sonora, Mexico 2001–2006

Employment

- Graduate Student Researcher, UCSC - 2010/09 to present.
- Technical Consultant, Colegio de Posgraduados - 2010/07 to 2011/12.
- Research Associate, HP Labs - 2009/03 to 2010/08.
- Research Assistant, HP Labs - 2006/08 to 2009/03.
- Research Assistant, Universidad de Sonora - 2004/08 to 2006/07.
- Summer Intern, CICESE - 2005/06 to 2005/08.
- Summer Intern, IIE - 2004/06 to 2004/08.

Experience

DBGroup @ UCSC, Santa Cruz, CA

September 2010 to present - Graduate Student Researcher

I'm a member of the *DBTune* project, where we are currently investigating automatic physical design tuning techniques.

Highlights:

- Extended MySQL to add *what-if optimization* capabilities.
- Designed a library for DBMS benchmarking. I have implemented the first components and its currently work-in-progress.
- Refactored a Java API for physical design tuning. The library will soon be released to the DB community.

GReNASeR @ Colegio de Posgraduados, Texcoco, Mexico

July 2010 to December 2011 - Technical Consultant

I was a member of the *GReNASeR* group, where geographic information systems are deployed to compute large-scale environmental models that estimate metrics of interests such as carbon footprints or vegetation indices. I also served as the point of contact of a collaboration with Google.org.

Highlights:

- Redesigned the back-end (in C++) of the main image processing system.
- Deployed a cluster to perform the computation.
- Ran experiments to evaluate the feasibility of alternate database systems (in particular Hadoop and SciDB).
- Incorporated Agile development techniques to the group.

DBLab @ HP Labs, Palo Alto, CA

March 2009 to September 2010 - Research Associate
August 2006 to March 2009 - Research Assistant

I was the technical lead on several one- and two-year-long projects. In general, my work consisted of interacting with business units to understand their problems, translate them into formal models, implement them and transfer them back so they could merge these solutions into existing/new products.

Highlights:

- Software architect of the physical design advisor for HP's OLTP (NonStop) and OLAP/Analytical (Neoview) DBMSes. The project was divided in many phases, where the first one, entitled "QuickStart", was incorporated to the set of client tools that customers use. I was in charge of transferring the tool to the development team from the business unit that was responsible of it.
- Software architect on a project that focused on the obfuscation of relational data that was successfully transfered to a business unit.
- As part of a collaboration agreement between HPL and the University of Sonora, I was in charge of coordinating the work of two interns.

Math Optimization Lab @ Universidad de Sonora, Hermosillo, Mexico

August 2004 to July 2006 - Research Assistant

Highlights:

- Designed and implemented a search engine prototype called *POPOTE*.
- For the *PlaDiet* project (which dealt with the planification and personalization of diet regimes) I designed the architecture and implemented the lower layers: data-access, back-end and genetic-algorithm.
- Designed and implemented a system for scheduling Residents and Internists of a Hospital. This system also used a genetic algorithm in its back-end.

CICESE, Ensenada, Mexico

June 2005 to August 2005 - Summer Intern

Implemented a genetic algorithm for DNA Sequencing by hibridization with isothermic libraries.

IIE, Cuernavaca, Mexico

June 2004 to August 2004 - Summer Intern

Developed a GUI for an electric controller based on a neural networks library.

Publications

Kaizen: A Semi-Automatic Index Advisor.
In preparation, 2012.
Ivo Jimenez, Neoklis Polyzotis and Quoc Trung Tran.

Benchmarking Online Index-Tuning Algorithms.
IEEE Data Engineering Bulletin, 2011.
Ivo Jimenez, Jeff LeFevre, Neoklis Polyzotis, Huascar Sanchez and Karl Schnaitter.

Data Desensitization of Customer Data for Use in Optimizer Performance Experiments.
ICDE, 2010.
Malu Castellanos, Umesh Dayal, Miguel Durazo, Ivo Jimenez, Perla Ruiz and Bing Zhang.

QuickStart: An Upfront Client-Based Design Advisor for Parallel Data Warehouses.
ICDE, 2009.
Malu Castellanos, Umesh Dayal, Ivo Jimenez, Steven Whang and Hans Zeller.

Pladiet: Automated Diet Scheduling using Genetic Algorithms.
Revista Iberoamericana de Sistemas, Cibernética e Informática, 2008.
Guadalupe Cota, Pedro Flores, Ivo Jimenez, Lluvia Morales and Juan Raygoza

Patents

US Patent Application #20080270370. *Desensitizing Database Information.*

Skills

- **Optimization Modeling**: I have experience modeling combinatorial optimization problems, in particular problems related to Physical Database Design.
- **Software Design**: I have extensive experience designing/refactoring layered architectures for data-centric systems and applications.
- **Programming Languages**: *Proficient*: C, C++, Java, Scala, Bash, Ruby, SQL, Datalog; *Experience*: Python, Perl, Haskell, Verilog.
- **Development Tools**: NetBeans, Eclipse, VIM; Git, Subversion.
- **Scientific Tools**: Weka, R, CPLEX, MatLab.
- **Operating Systems**: Extensive experience managing and using Linux-based systems.