

Alexander Behm

CONTACT INFORMATION

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PERSONAL PROFILE

PhD candidate in the Information Systems Group at UCI working on approximate string matching and larg-scale storage and indexing. Highlights include key contributions to *The Flamingo Package* (<http://flamingo.ics.uci.edu>), contributions to the *Hyracks* platform for parallel data-intensive computing (<http://code.google.com/p/hyracks>), and experience with Hadoop and Microsoft's Scope. Academic adviser: Prof. Chen Li

EDUCATION

University of California, Irvine, CA, USA

Ph.D. Candidate, Computer Science **September 2007 to present**

University of Cooperative Education, Stuttgart, Germany

B.Sc. (Hons), Computer Science **October 2003 to October 2006**

- Thesis: Integrating Query-Feedback based Statistics into Informix Dynamic Server
- Studied one semester abroad at the Staffordshire University of Computing, UK

PROFESSIONAL EXPERIENCE

Cloudera Inc., Palo Alto, CA USA

Internship in Platform Team **June 2011 to September 2011**

- Designed and implemented software components for improving the performance of SQL-like queries in the Hadoop ecosystem.

Microsoft Research, Redmond, Washington USA

Internship in Bing/SCOPE Group **June 2009 to September 2009**

- Developed a tool for analyzing SCOPE (Structured Computations Optimized for Parallel Execution) workloads.
- Implemented a decoder module that generates a SCOPE script from an arbitrary logical operator tree.
- Modified SCOPE view matching code to handle certain SCOPE peculiarities.

Gimas GmbH, Frankfurt am Main, Germany

IT Consultant for Deutsche Bank AG (DB) **October 2006 to August 2007**

- Designed and implemented data management system for personnel movements with automated information integration and reporting functionality.
- Deployed above software for DB Private Business Clients HR, trained personnel managers to use the software and improved the software based on user feedback.

Part-Time Job (while attending high-school) **January 1998 to October 2003**

- Administered and designed driver database for client and performed user support for driver related issues.

IBM Almaden Research Center, San Jose, CA USA

Internship in Database Systems Group **May 2006 to September 2006**

- Enhanced query-feedback based statistics generation (see internship 2005).
- Integrated research prototype into IBM Informix Dynamic Server.

Internship in Database Systems Group **May 2005 to September 2005**

- Conducted research in context of Learning Optimizer (LEO) project, with supervisors Volker Markl and Peter J. Haas.
- Designed and implemented research prototype for query-feedback based statistics generation and maintenance using maximum entropy model.
- Optimized statistics generation for single-dimensional case.

PUBLICATIONS

Athena Ahmadi, Alexander Behm, Nagesh Honnalli, Chen Li, Lingjie Weng, Xiaohui Xie *Hobbes: Optimized Gram-Based Methods for Efficient Read Alignment*, Nucleic Acids Research 2011; doi: 10.1093/nar/gkr1246

Alexander Behm, Vinayak R. Borkar, Raman Grover, Michael J. Carey, Chen Li, Nicola Onose, Rares Vernica, Alin Deutsch, Yanis Papakonstantinou, Vassilis J. Tsotras *Asterix: Towards a Scalable, Semistructured Data Platform for Evolving World Models*, Distributed and Parallel Databases, Volume 29, Number 3, 185-216, DOI: 10.1007/s10619-011-7082-y

Alexander Behm, Chen Li, Michael J. Carey, *Answering Approximate String Queries on Large Large Data Sets Using External Memory*, ICDE 2011

Sattam Alsubaiee, Alexander Behm, Chen Li, *Supporting Location-Based Approximate-Keyword Queries*, ACM SIGSPATIAL GIS 2010

Alexander Behm, Chen Li, Shengyue Ji, Jiaheng Lu, *Space-Constrained Gram-Based Indexing for Efficient Approximate String Search*, ICDE 2009

Alexander Behm, Volker Markl, Peter J. Haas, Keshava Murthy, *Integrating Query-Feedback Based Statistics into Informix Dynamic Server*, BTW 2007

AWARDS

2010-2012 National Achievement Rewards for College Scientists (ARCS) Award

ACADEMIC
EXPERIENCE

University of California, Irvine, CA USA

Teaching Assistant

September 2008 to June 2009

- Assisted undergraduate course *Introduction to Data Management*, proving homework, exams, grading criteria and student guidance on projects
- Supervised student projects and evaluated individual project phases for undergraduate course *Projects in Database Management*.

Reader

September 2007 to June 2008

- Devised grading criteria and evaluated individual project phases for undergraduate course *Projects in Database Management*.
- Evaluated quizzes, homework and exams for undergraduate course *Programming Languages*.
- Collaborated with co-instructor to create exams and homework for graduate course *Internet* and exercised grading thereof.

TECHNICAL SKILLS Extensive experience in designing and implementing information systems using C/C++, Java and Hadoop. Exceptional expertise in indexing techniques and algorithms for approximate string matching.

Development: C/C++, Java, SQL, XQuery, XPath, Google Protocol Buffers, Subversion and more. Designed and developed significant portion of *The Flamingo Package for Approximate String Matching* in C/C++ (<http://flamingo.ics.uci.edu>). Implemented a B+-Tree in Java for the *Hyracks* platform for parallel data-intensive computing (<http://code.google.com/p/hyracks>).

Hadoop: Setup and administration, inverted-index construction, PageRank, collection-wide statistics generation, and more.

Applications: L^AT_EX, B_IB_TE_X, GnuPlot, Microsoft Office, and other common productivity packages for Linux and Windows platforms.

Relevant Graduate Courses: CS222: Database Management Systems (grade A), CS223: Transaction Processing (grade A), CS224: Advanced Topics in Data Management (grade A), CS230: Distributed Systems (grade A+), CS221: Information Retrieval (grade A+), CS295: XML Data Management (grade A).
GPA at UC Irvine: 3.964

PERSONAL SKILLS **Languages:** English (native), German (native), French (8 years of instruction)

Competence in presentation techniques acquired during training at IBM and at undergraduate university.

Interpersonal and intercultural proficiency gained during international work/study experience and enhanced with undergraduate courses specifically on this subject.

LEISURE Tennis, squash, timber challenge, frisbee, computer gaming, vegetarian/vegan cooking