Victor Zakhary — Research Assistant

Personal Information

Victor Zakhary
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Research Interest

I am interested in distributed systems, data and transaction management, databases, big data and applied machine learning in systems and data management. I am currently working on geo-replicated databases. Specifically, I am tackling the problem of data placement and showing that some traditional conventions in data replication do not apply to a geo-replicated setting. We have been exploring alternate design decisions and applying them to traditional majority and leader-based protocols, as well as modern alternatives like Spanner and DSL's Helios.

Education

Sep 2013 - Present : PhD. in Computer Science, University of California,Santa Barbara (UCSB).
Research Advisors : Amr El Abbadi and Divyakant Agrawal.
Research Title : Data placement for efficient geo-replicated data management

Jan 2011 - August 2013 M.Sc. in Computer and Systems Engineering, Alexandria University, Egypt
Advisors : Dr. Hicham Elmongui and Prof. Magdy Nagy
Thesis title : MobiPLACE* a Distributed Framework for Spatio-Temporal Data Streams Processing Utilizing Mobile Clients' Processing Power.

September 2005 - June 2010 Bacholar in Computer and Systems Engineering, Alexandria University, Egypt

Teaching Experience

I worked as a teaching assistant for the past 6 years (Sep 2010-Jun 2013 at Alexandria University and Sep 2013 - Jun 2016 at UCSB). I was selected to be the **Lead TA** in the Computer Science department at UCSB 2015-16. I assisted teaching the following classes at UCSB :

— **CS130A : Data Structures and Algorithms using C++** - Winter 2014 and 2016
— **CS501 : Pedagogies and Teaching Strategies**, graduate class - Fall 2015
— **CS171 : Distributed Systems** - Spring 2015
— **CS40 : Computer Foundation and Discrete Mathematics** - Winter 2015
— **CS271 : Advanced Distributed Systems**, graduate class - Fall 2014
— **CS138 : Automata and Languages** - Spring 2014
— **CS8 : Introduction to Programming using Python** - Fall 2013 and Spring 2016

In addition, I assisted teaching the following classes at Alexandria University :
— **Introduction to Programming using Python**
— **Introduction to Programming using QBasic**
— **Computer Architecture**
— **Microprocessors**
— **Discrete Mathematics and its Applications**
— **Linear Control Systems**
— **Data Structures using C++**

Awards

Outstanding Teaching Assistant from the Computer Science Department at UCSB for the academic year 2015-16

Outstanding Teaching Assistant in the Computer Engineering Program from the College of Engineering at UCSB for the academic year 2014- 15 (*This award is given based on senior student votes*)

Distinguished Teaching Assistant from the Computer Science Department at UCSB for the academic year 2014-15

Leadership Experience

CS Graduate affairs committee member (2015-2016)

CS lead teaching assistant (2015-2016)

RESEARCH PAPERS	**Victor Zakhary**, Divyakant Agrawal, Amr El Abbadi.
	Caching at the Web Scale. WWW2017 (Tutorial)
	Cetin Sahin, Aaron Magat, **Victor Zakhary**, Amr El Abbadi, Rachel Lin and Stefano Tessaro
	Understanding the Security Challenges of Oblivious Cloud Storage with Asynchronous Accesses. ICDE 2017 (Demo paper)
	Victor Zakhary, Faisal Nawab, Divyakant Agrawal, Amr El Abbadi.
	DB-Risk : The Game of Global Database Placement SIDMOD 2016 (Demo paper).
	Cetin Sahin, **Victor Zakhary**, Amr El Abbadi, Huijia (Rachel) Lin, Stefano Tessaro.
	TaoStore : Overcoming Asynchronicity in Oblivious Data Storage S&P 2016.
	Victor Zakhary, Hicham G. Elmongui, Magdy H. Nagi
	MobiPLACE* : A Distributed Framework for Spatio-Temporal Data Streams Processing Utilizing Mobile ClientśProcessing Power. Mobiquitous 2013.

INDUSTRIAL EXPERIENCE	**PhD Software Engineer Intern - Ads Infrastructure - Google (Jun 2016 - Sep 2016)**
	I worked on resource optimization and dynamic load balancing for a very large scale caching layer to support hundreds of millions of keys lookups per second. By the end of the internship, I helped save 40% of the server cpu usage for this caching service.
	PhD Software Engineer Intern- Vanadium - Google (Jun 2015 - Sep 2015)
	I built a distributed p2p file system over a distributed p2p key/value store. We built a POSIX like api to support file and directory hierarchy management. In addition, we support sharing between multiple clients enforcing the file system's permissions semantics.
	Software Engineer Intern at Sears Holdings Corporation (Jun 2014 - Sep 2014)
	I worked in the search optimization team. Throughout my internship, I built services and debugging tools to provide the team better understanding about their core search responses. Also, we developed a proof of concept system that solves the product similarity problem based on product features. We used typical tf-idf text similarity technique. We also updated the similarity scores using topics generated by LDA topic modelling algorithm to get better short text similarity scores.
	Co-founder of Kdev (Kreation development), Alexandria, Egypt (Feb 2012 - Aug 2013)
	I co-founded Kreation development IT solutions in Alexandria, Egypt. I also worked as web and mobile freelancer developer on Odesk (Upwork).
	Software Engineer in Innuva IT solutions, Alexandria, Egypt (Feb 2011 - Feb 2012)
	Solved performance and scalability problems of web applications by distributing computation load between client and server and reducing the communication load using caching.

TECHNICAL PROJECTS	Implementations of a distributed p2p file system over a distributed p2p k/v store.
	Implementation of a file system in the user space using FUSE.
	Implementation of reliable data transfer protocol in the application layer over UDP.

REFERENCES	Amr El Abbadi : amr@cs.ucsb.edu
	Divyakant Agrawal : agrawal@cs.ucsb.edu
	Joy Banerjee : joyb@google.com
	Himabindu Pucha : hpucha@google.com