Adam Dou

(650) 739-5021 , jdou@cs.ucr.edu , http://www.cs.ucr.edu/∼jdou

RESEARCH INTERESTS

Research and building systems in the area of distributed systems, wireless and ubiquitous computing. Also interested in human computer interaction and user interfaces.

EDUCATION

***Doctor of Philosophy**, Computer Science*
University of California Riverside, Riverside, CA USA
Advisor: Dr. Harsha V. Madhyastha
Dec 2011

***Bachelor of Applied Science**, Computer Engineering*
University of Toronto, Toronto, ON, CA
Advisor: Dr. Wei Yu
May 2005

PROFESSIONAL EXPERIENCE

Software Engineer Dec 2011 - Present
Google, Mountain View
- Frontend UI for Mobile phones.

Researcher, Graduate Student Sept 2006 - Present
Distributed Real-Time Systems Laboratory
University of California Riverside
- Distributed cache management for content delivery systems - Java deployed over PlanetLab
- Distributed clustering applications using Mobile MapReduce - Symbian C++ and Python system deployed on Nokia N95 Smartphone testbed
- Mobile MapReduce framework system: Relability and Performance - Python system deployed on Nokia N95 Smartphone testbed
- Flash equipped sensor systems: Efficient data indexing and Quality of service for flash IO - NesC running on TinyOS (TOSSIM), C application on cc1010 sensor
- Peer-to-peer, precision based caching for dynamic data streams - Java application deployed over Local network and over PlanetLab

Software Engineer in Test Intern June 2010 - Sept 2010
Google, Mountain View
- Designed and implemented a system to increase test log readability
- Worked with multiple teams to get changes into place
- Development using Java, Bash, Freemarker

Research Intern July 2008 - Oct 2008
Nokia Research Center, Palo Alto
- Implementing a MapReduce framework on mobile devices using Python
- Remote code management (distribution and execution) on Smart Phones using Python

Programmer Analyst June 2005 - Sept 2006
TELUS Mobility, Toronto
- Designed and implemented a new front end framework using Tiles and Struts
- Proposed a new internal communication system and coordinated with internal groups to conduct pilot tests
- Initiated unit testing quality control measure in development phase

- Refactored and redesigned existing code to integrate a new XML rules based engine
- Tracked and fixed code defects in development and production environments
- Development using J2EE, Struts, Eclipse, ANT, Weblogic, ClearCase and Oracle

PUBLICATIONS

Data Clustering on a Network of Mobile Smartphones Adam Dou, V. Kalogeraki, D. Gunopulos, T. Mielikinen, V. Tuulos, S. Foley and C. Yu. *11th IEEE/IPSJ International Symposium on Applications and the Internet (SAINT 2011), Munich, Germany, July, 2011.* Best Student Paper Award.

Scheduling for Real- Time Mobile MapReduce Systems Adam Dou, V. Kalogeraki, D. Gunopulos, T. Mielikinen and V. Tuulos, *5th ACM International Conference on Distributed Event-Based Systems (DEBS 2011), New York, New York, July, 2011.*

Using MapReduce Framework for Mobile Applications Adam Dou, V. Kalogeraki, D.gunopulos, T. Mielikinen and V. Tuulos. Book Chapter, To appear in *Multimedia Services and Streaming for Mobile Devices: Challenges and Innovations, 2011*

Misco: A MapReduce Framework for Mobile Systems Adam Dou, Dimitrios Gunopulos, Vana Kalogeraki, Taneli Mielikinen and Ville Tuulos *3rd International Conference on PErvasive Technologies Related to Assistive Environments (PETRA 2010), Samos, Greece, June, 2010.*

Real-Time Querying of Historical Data in Flash-equipped Sensor Devices Adam Dou, Song Lin and Vana Kalogeraki *29th IEEE Real-Time Systems Symposium (RTSS 2008), Barcelona, Spain, December 2008.*

RG-EDF: An I/O Scheduling Policy for Flash Equipped Sensor Devices Adam Dou and Vana Kalogeraki *6th IFIP Workshop on Software Technologies for Future Embedded & Ubiquitous Systems (SEUS 2008), Capri Island, Italy, October 2008.*

PROJECTS

Caching in Content Delivery Networks Jan 2011 - Present

- A distributed caching system for reducing memory usage and user latencies
- Implemented in Java and on PlanetLab

Misco: Mobile MapReduce Framework July 2008 - Jan 2011

- MapReduce systems allow for simple development and deployment of parallel computations on massive amounts of data
- We implemented a MapReduce system targetted at smartphones
- Implemented in Python and is platform independent - runs on any system with Python and networking support
- Our system is being used to develop scheduling systems and distributed applications (such as clustering, real-time processing and streaming)

Precision Based Caching for Dynamic Streams Sept 2006 - March 2007

- Clients which require less precise information from a data source can be sent data less often, thus incurring a lower bandwidth cost, than those who require a higher

precision.
- We take advantage of this when building a network for streaming real-time or dynamic data to a group of users.
- Implemented in Java using sockets and deployed on Lan and over PlanetLab

Efficient Indexing for Flash Equipped Sensors May 2007 - July 2008

- Storing data on sensors and later sending only useful information has been explored recently with the increased popularity of flash devices. Flash memories have several unique characteristics which make using existing indexing methods inefficient or impossible.
- We develop two indexing techniques to allow for Aggregate queries and Random Sample queries.
- Implemented on a CC1010 sensor with attached Flash interface, also simulated using NesC on TinyOS and evaluated using TOSSIM

QoS for I/O on Flash Equipped Sensors Dec 2007 - May 2008

- With the increasingly complex systems being deployed on sensor networks, the need for storage related scheduling becomes important. Traditional schedulers for harddisk based are inefficient due to the differences between them and flash memories.
- Developed a scheduler optimized for the particularities of flash memories.
- Implemented on a CC1010 sensor with attached Flash interface, also simulated using NesC on TinyOS and evaluated using TOSSIM

Class Projects

- Remote Control Application using Android (2008)
- Terraform - Automatic Terrain Formation (2007)
- Multiple Readers in RFID Systems (2006)
- JPEG2000 Image Protection using FOuntain Codes (2005)

SKILLS

Programming Languages
Python, J2EE/J2SE, C/C++, C#, SQL, PERL, PHP, XML, HTML, CSS
Sensor Networks
NesC/TinyOS/TOSSIM, TI CC1010, C/ATmel48
Databases
MySQL, PostgreSQL, DB2, Oracle
Environments & Frameworks
Eclipse, Microsoft Visual Studio, .NET framework, Swing, Web Services, Servlets, JSP, Ant, EJB, Struts, Hibernate, CORBA, Apache HTTP Server, Tomcat, Axis, SOAP
Software Design
UML, Design Patterns, OOP, Software Quality Assurance and Testing
Operating Systems
Windows, Linux, Unix, Solaris, FreeBSD

REFERENCES

Available upon request.