

Ashish Singh, M.Sc. (Computer Science)

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IT Professional with international work experience (research, academic and industrial) in interface prototyping, robotic interfaces, interaction design, requirements gathering, usability testing, software testing and evaluation. Ability to learn quickly and commitment to continuous professional development.

Education

M.Sc., Computer Science, University of Manitoba
Human-Computer Interaction and Robotics

March 2014

B.Tech., Computer Science & Engineering, Punjab Technical University, India
Custom web news system for industry

July 2010

Skills & Abilities

- Specialized in User Interface (UI) design, prototyping, requirements gathering, usability testing, interaction design, software testing, documentation and evaluation, human factors and ergonomics. Experienced in designing easy to use software front ends for embedded, web, mobile and desktop systems with reliable back ends for enhanced user interaction. Programming languages (partial list): C#, C, C++, Python, Java, PHP, HTML5, JavaScript, PL/SQL, and other languages as project demands.
- Proficient in user study design and statistical data analysis for evaluating software systems.
- Technical writing: competitive refereed international publications.
- Strong presentation skills: presented at leading international conferences and answered questions from the audience. Invited for talks at University of Manitoba: departmental seminar (2013) and thesis competition (2014).

Organizational Skills

- Organized meetings and educational workshops as a President of hUMANitech club at the University of Manitoba.
- Organized tours and demos for visitors at the Human-Computer Interaction labs, University of Manitoba.
- Organized techno-cultural symposiums at Chandigarh Engineering College, India.

Time Management Skills

- Submitted research papers to competitive international conferences with tight deadlines.
- Executed tasks in parallel, having taken several courses, TA/Marking and meeting conferences deadlines.

Experience

Research Assistant, Human-Robot Interaction Laboratory, University of Manitoba

July 2011 – Present

- Designed a dog tail interface for utility robots to allow them to communicate their states.
- Implemented a remote control interface (C++, Qt, etc.) for wirelessly controlling a vacuum cleaner robot.
- Worked as a team player with my colleagues: designed and implemented a touchscreen interface (Android, Eclipse, etc.) for controlling an industrial robotic arm and played a role of a lead researcher to compare our touchscreen interface to the existing keypad interface.
- Conducted formal evaluations of these interfaces by conducting user studies and statistically analyzing the results.
- Published several research papers in international conferences and traveled to present them.

Technical Trainer, HCL Infosystems Limited, India

June 2010 – June 2011

- Trained final year undergrad students from various universities. Introduced them with the current industrial trends and provided them with a hands on experience on various ongoing projects (PHP, MySQL, etc.).
- Evaluated the overall progress of students and reported their scores back to their universities.

Software Developer, Decmar Limited, Middlesex, UK

January 2010 – June 2010

- Enterprise software development (J2EE, etc.) for accounts management.
- Designed a system to provide a fully integrated functionality of company's account which included maintaining electronic records of clients and tracking customer contracts, invoices and payments.

Academic Experience

- Teaching Assistant**, Introduction to Computer Systems (COMP 2280) May 2012 – Present
- Conducted labs, marked lab assignments and helped students with LC3 (assembly language) programming.
 - Invigilated mid-term and final examinations.
- Grader/Marker**, Introduction to Computer Systems (COMP 2280) January 2014 – Present
- Marked assignments using an industry learning management system (Desire2Learn).
 - Provided constructive feedback to the students.
- Grader/Marker**, Introduction to Computer Programming (COMP 1010) September 2011 – December 2013
- Marked assignments using a custom learning management system and helped students with Java programming.
 - Provided constructive feedback to the students.
 - Invigilated mid-term and final examinations.

Conference Experience

Chaired "Interface Layout and Data Entry" session at the 14th IFIP TC13 International Conference on Human-Computer Interaction – INTERACT 2013, Cape Town, South Africa.

Projects

- Exploring the use of animal-inspired interfaces for human-robot interaction Completed in 2013
Built a robotic dog tail to explore how people how people respond to various tail motions.
- Designing an easy to use on-screen interface for controlling a commercial robotic arm Completed in 2013
Sketched and implemented an initial touchscreen interface design, and conducted a study to compare a commercial keypad interface with our newly developed touchscreen interface.



Dog tail interface for utility robots



Touchscreen interface for a robot arm

Awards

- Best Video Award 2nd Prize, Golden Keepon Robot 2013
8th ACM/IEEE Conference on Human-Robot Interaction
- Conference Travel Award 2013
14th IFIP TC13 International Conference on Human-Computer Interaction
- Conference Grant 2013
University of Manitoba Graduate Students' Association
- Conference Travel Grant 2013
Department of Computer Science and Faculty of Science, University of Manitoba
- Student Volunteer Award 2012
7th ACM/IEEE Conference on Human-Robot Interaction
- Conference Travel Grant, \$1500 2012
Department of Computer Science, Faculty of Science and Faculty of Graduate Studies, University of Manitoba
- Guaranteed Funding Package (2 years), \$16,000 / year 2011
Department of Computer Science, University of Manitoba
- International Graduate Student Entrance Scholarship, \$4,000 2011
Faculty of Graduate Studies, University of Manitoba

Award for Academic Excellence Chandigarh Engineering College, India	2010
Award for the Best Mind Map HCL Infosystems Limited, India	2010

Publications

ASHISH SINGH. A Dog Tail Interface for Communicating Affective States of Utility Robots. M.Sc. Thesis, 2014. University of Manitoba, Winnipeg, Manitoba, Canada.

ASHISH SINGH, James E. Young. A Dog Tail for Utility Robots: Exploring Affective Properties of Tail Movement. In proceedings of the 14th IFIP TC 13 International Conference on Human-Computer Interaction – INTERACT 2013, Cape Town, South Africa.

ASHISH SINGH, Stela H. Seo, Yasmee Hashish, Masayuki Nakane, James E. Young, Andrea Bunt. An Interface for Remote Robotic Manipulator Control That Reduces Task Load and Fatigue. In proceedings of the IEEE International Conference on Robot and Human Interactive Communication, RO-MAN 2013, Gyeongju, South Korea.

ASHISH SINGH, James E. Young. Animal-Inspired Peripheral Interaction: Evaluating a Dog-Tail Interface for Communicating Robotic States. In proceedings of the Workshop on Peripheral Interaction: Embedding HCI in Everyday Life at the 14th IFIP TC 13 International Conference on Human-Computer Interaction – INTERACT 2013, Cape Town, South Africa.

ASHISH SINGH, James E. Young. A Robotic Tail for Communicating States. In adjunct proceedings (video abstracts) of the ACM/IEEE International Conference on Human Robot Interaction, 2013. HRI'13 Late-Breaking Reports, Tokyo, Japan. **Best video award 2nd Prize.**

ASHISH SINGH, James E. Young. Exploring Animal-Inspired Human-Robot Interaction: a Robotic Tail for Communicating State. In adjunct proceedings (late-breaking reports) of the ACM/IEEE International Conference on Human Robot Interaction, 2012. HRI'12 Late-Breaking Reports, Boston, Massachusetts, USA.

Volunteer Experience

President, hUMANitech Human-Computer Interaction Club, University of Manitoba Organized educational workshops, recruited and supervised undergraduate students	2013 – Present
Reading Meeting Coordinator, HCI Labs, University of Manitoba Organized weekly meetings to read and discuss research papers	2013 – Present
Outreach Coordinator, HCI Labs, University of Manitoba Organized tours for our labs, planned the live demonstrations of projects.	2011 – 2013
Student Volunteer, 7th ACM/IEEE Conference on Human-Robot Interaction Welcomed and registered the attendees of the conference	2012
Meeter and Greeter, University of Manitoba Welcomed new students to the Fort Garry campus, University of Manitoba	2012
Represented Department of Computer Science, University of Manitoba at Science Rendezvous Science Rendezvous is an annual science festival that partners with Canada's top research institutions.	2012

Reference

Dr. James E. Young, Assistant Professor, Department of Computer Science, University of Manitoba
+1-204-474-6791, young@cs.umanitoba.ca
Relationship: M.Sc. thesis supervisor