



Juhi Ranjan

US Citizen, Overseas Citizen of India

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Educational Background

2013

PhD Computer Science (ongoing), NSF GRFP Fellow, Adviser: Prof. Whitehouse.
University of Virginia, Charlottesville, USA

2011
2013

MS Computer Science, Adviser: Prof. Whitehouse.
University of Virginia, Charlottesville, USA

2004

2008

BTech Computer Science & Engineering, Gold Medalist, Adviser: Prof. Vasistha.
Mody University, India

Awards and Honors

2016

N2 Women Young Researcher Fellowship.

2016

French-American Doctoral Exchange Program (8% acceptance).

2016

Outstanding Research by Graduate Student (CS Dept.@UVa).

2015

Selected to participate in NextProf Workshop at U.Mich.

2014

Double Hoo Research Grant (10% acceptance).

2013

2015

Travel Grants - Sensys, IPSN, Ubicomp.

2013

NSF Graduate Research Fellowship (5% acceptance).

2009

Best Mentor of the Month in Accenture.

2008

Gold Medal for coming 1st in the class of 2008 in BTech.

2007

IIT Bombay Research Fellowship.

Skills

- Software Platforms J2EE, J2SE, Python, Perl, Bash, Matlab, Visual C#, C/C++, SVN, Linux, Embedded C, Eclipse, Android Studio, AVR-Gcc, PHP, MySQL, Oracle, Web Programming
- Hardware Platforms Atmel Atmega series, IR communication, Zigbee, Synapse SNAPpy, Android Smartphone, Android Wear, Shimmer, Arduino, Hobo Datalogger, Thermographic camera, Kinect RGB-D camera, .NET Gadgeteer
- Hardware Skills Circuit design, Eagle PCB layout design, Soldering QFN and SMD components (0603), Debugging circuit faults
- Relevant Courses Machine Learning, Cyber Physical Systems, Smart Buildings, Ubiquitous Computing, Smart Cities, Homes, Phones, and Beyond
- Other Skills Experience filing IRB, Recruited and worked with 60 participants across different projects

Professional Experiences

Research

2013

Microsoft Research Cambridge, U.K., *Research Intern*, [3 months].

Supervisor: James Scott

Conducted a 30 person study to evaluate the use of thermographic camera in determining dynamic thermal comfort preferences

2010
2011

DA-IICT, India, *Research Engineer*, [1 year].

Supervisor: Prof. Prabhat Ranjan

Designed and implemented a gesture-based assistive device for people with Cerebral Palsy that allowed them to make gross arm movements to control peripheral devices such as TV, lights, fan etc.

2007

IIT Bombay, India, *Research Intern*, [3 months].

Supervisor: Prof. Uday Khedker

Developed algorithms to predict the unused heap memory in a program execution

2005

DA-IICT, India, *Research Intern*, [3 months].

Supervisor: Prof. Prabhat Ranjan

Developed a mobility module for a modular sensor network testbed CENSE.

Integrated the module with an algorithm for dynamically ascending a scalar light gradient

Industry

2008
2010

Accenture Bangalore, India, *Software Engineer*, [2 years].

Supervisor: Shirley Samuel, Manager: Sankari Kannan

J2EE developer for a US healthcare portal serving 24.6 million customers

Promoted within a year and rated in top performing 5% of employees

2006

Rhythm and Hues Hollywood Special Effects Studio, *Systems Intern*, [3 months].

Improved response time of a time-critical web-based media retrieval system using Perl-MySQL

Teaching Experience

Teaching Assistant

2012

CS 4457 - Computer Networks, *Supervisor: Prof. Kamin Whitehouse*,

Responsibilities: Graded assignments and exams, delivered guest lectures.

2011

CS 1112 - Introduction to Programming, *Supervisor: Prof. James Cohoon*,

Responsibilities: Held office hours for students, graded homework and exams.

Guest Lectures

2015

Case Study in System Level Design & Modeling,

Indian Institute of Technology, New Delhi, India.

My talk focused on system level design and exploration of issues in wearable applications

2015

Object Hallmarks: Identifying Object Users using Wearable Wrist Sensors,

Indraprastha Institute of Information Technology, New Delhi, India.

Talked about my research in detecting object usage by people

2012

CS 4457 Computer Networks,

University of Virginia, Charlottesville, VA.

Took two lectures in a class of 60 undergrads

2006
2008

Workshops (300+ participants),

Mody University, Rajasthan, India.

Was the sole instructor in workshops that focused on basics of Linux command line, bash scripts, Vim, GIMP to undergrads

Publications

Conferences

2016 • **ThermalSense: Determining Dynamic Thermal Comfort Preferences using Thermographic Imaging.**

Venue International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp)
Authors Juhi Ranjan, James Scott

2015 • **Object Hallmarks: Identifying Object Users using Wearable Wrist Sensors.**

Venue International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp)
Authors Juhi Ranjan, Kamin Whitehouse

2014 • **Discerning Electrical and Water Usage by People in Homes.**

Venue Conference on Embedded Systems for Energy-Efficient Buildings (Buildsys)
Authors Juhi Ranjan, Erin Griffiths, Kamin Whitehouse

2013 • **An RF doormat for Tracking People's Room Locations.**

Venue International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp)
Authors Juhi Ranjan, Yu Yao, Kamin Whitehouse

2010 • **RF-CePal: A Universal Remote Control based on MEMS Accelerometer.**

Venue International Conference on Wireless Communication and Sensor Networks (WCSN)
Authors Juhi Ranjan, Hiren Shah, Sanika Joshi, Brijesh Chokhra and Prabhat Ranjan

Journals

2012 • **Towards Occupancy-Driven Heating and Cooling.**

Venue IEEE Design & Test of Computers, *Special Edition: Green Buildings*
Authors Kamin Whitehouse, Juhi Ranjan, Jiakang Lu, Tamim Sookoor, Mehdi Saadat, Anselmo Canfora, Hossein Haj-Hariri, Galen Staengl, Carrie Meinberg Burke

Workshops

2016 • **Towards Recognizing Person-Object Interaction Gestures using a Single Wrist Wearable Device.**

Venue International Workshop on Human Activity Sensing Corpus and Application
Authors Juhi Ranjan, Kamin Whitehouse

2015 • **Rethinking the Fusion of Technology and Clinical Practices in Functional Behavior Analysis for the Elderly.**

Venue International Workshop on Human Behavior Understanding
Authors Juhi Ranjan, Kamin Whitehouse

Posters/Demo

2016 • **Automatic Authentication of Smartphone Touch Interactions using Smart-watch, Demo.**

Venue International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp)
Authors Juhi Ranjan, Kamin Whitehouse

2015

Automatic Rock Climbing Route Inference using Wearables, *Poster*.

Venue International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp)

Authors Avinash Kalyanaraman, Juhi Ranjan, Kamin Whitehouse

2014

Recognizing Object Users In Smart Homes, *Poster*.

Venue International Conference on Information Processing in Sensor Networks (IPSN)

Authors Juhi Ranjan, Kamin Whitehouse

2014

Generating Home Energy Footprint by Assigning Fixture Usage to Individuals in Homes, *Poster*.

Venue Conference on Embedded Systems for Energy-Efficient Buildings (Buildsys)

Authors Juhi Ranjan, Kamin Whitehouse

2012

Using Mid-range RFID for Location based Activity Recognition, *Poster*.

Venue International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp)

Authors Juhi Ranjan, Yu Yao, Erin Griffiths, Kamin Whitehouse

2012

Tracking Individuals by Height in a Noisy Home Environment, *Demo*.

Venue Conference on Embedded Networked Sensing Systems (SenSys)

Authors Erin Griffiths, Juhi Ranjan, Kamin Whitehouse

Theses

2016

Detecting Object Usage by Individuals using Wearables, *[Ongoing]*.

Degree Doctor of Philosophy

2013

RF Doormat - Room-Level Tracking of Residents in Homes using RFID.

Degree Master of Science

2008

Location Based Disaster Alert System.

Degree Bachelor of Technology

Articles Featured In

FEMINA INDIA **HEROES Interview - Carving a Niche: Juhi Ranjan**

Profile was published by an Indian national magazine

TIMES OF INDIA **Ahmedabad girl receives Double Hoo Research Grant**

Coverage on the grant that I received to collaborate with an undergrad on a research project

FAST COMPANY **Internet Of Things Brings Harry Potter's "Marauders Map" To Life**

MAGAZINE *News coverage of our height based, person identification sensor prototype*

CRA-W NEWSLETTER **Juhi Ranjan received NSF GRFP Fellowship**

News coverage of the NSF GRFP fellowship that I received

UNBOUND MAGAZINE **Engineering Students use Rice Hall's Living Lab to Improve Energy Efficiency**

News coverage of the work done by our research group at UVa

NERDY DEVI'S BLOG **The Unfair Project 2 - Photo-showcase of women with darker skin color**

Photo profile was published in a blog addressing the societal bias associated with darker skin in India

Service

Reviewer

2015

Mock Technical Program Committee for IPSN.

Reviewed 10 papers and was member of mock program committee

2011

TOSN, Pervasive, CHI, UbiComp.

Reviewed 20+ journal and conference submissions

Management

2016

N² Women event at UbiComp.

Organized a talk and breakout group discussion event aimed at supporting new researchers in Computer Science

2012

2014

Student Organizer.

Managed attendee registration at UbiComp 2012 and 2013, IPSN 2014

2012

2013

Graduate Student Representative @UVA.

Was elected by the graduate students at Computer Science Dept. to represent their concerns at faculty meetings

2007

2008

President of Computer Science Society.

Coordinated technical competitions and events at undergraduate university

2006

2008

Technical Editor of Engineering Magazine.

Selected and edited articles published in the annual publication

Outreach

2013

2014

SHE++ panel speaker at University of Virginia.

Gave a talk on why women should select Computer Science major

2013

CS Dept. panel speaker.

Gave a talk on why I decided to major in Computer Science

2011

2012

Teacher Attracting Girls (TAG) member.

Member of the Organizing Committee training high school teacher to encourage female students to pursue Computer Science

Mentoring

2011

Undergraduate Students.

Mentored 4 undergraduate students at UVA

2015

High School Students.

Mentored 5 high school students on a photography field trip

2009

2010

Junior Software Engineers.

Mentored 20 junior software engineers at Accenture and won 'Best Mentor of the Month' award

Judge

2015

Virginia Piedmont Regional Science Fair.

2014

2015

High School Students' Game Expo.