

RAKSHIT AGRAWAL

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RESEARCH

My research is primarily in the field of Information and Communication Technologies for Development (ICTD). Broadly, my work spans across combinations of Human-Computer Interaction, Crowdsourcing, User Interfaces, Social Computing and Human Computation.

EDUCATION

University of California, Santa Cruz PhD, Computer Science	2014 - Present
Jaypee Institute of Information Technology, Noida Bachelor of Technology, Information Technology G.P.A. 6.1/10.0 (68%)	2012
DAV Public School, Shreshtha Vihar, Delhi All India Senior School Certificate Examination Percentage 76.9% (PCM 81%)	2008
DAV Public School, Shreshtha Vihar, Delhi All India Secondary School Examination Percentage 92.6%	2006

PUBLICATIONS

1. Rakshit Agrawal, Mridu Atray, and S. Krishna Sundari. KrishiEkta: Integrated Knowledge and Information Distribution System for Indian Agriculture. In *Proceeding of the 4th ACM Symposium on Computing for Development (ACM DEV-4)*, 2013
2. Rakshit Agrawal, Mridu Atray, and S. Krishna Sundari. Exploring Suitable Interfaces for Agriculture Based Smartphone Apps in India. In *Proceeding of the 11th Asia Pacific Conference on Computer Human Interaction (APCHI 2013)*, 2013
3. Rakshit Agrawal, Mridu Atray, and S. Krishna Sundari. Sensor network architecture for soil and weather data extraction and database generation. In *Proceedings of the 10th ACM Conference on Embedded Network Sensor Systems (SenSys'12)*, 2012
4. Rakshit Agrawal, Mridu Atray, and S. Krishna Sundari. Concept to design a hand-held crop management device (CMD) for farmers. In *Proceedings of the 2nd ACM Symposium on Computing for Development (ACM DEV'12)*, 2012

AWARDS AND ACHIEVEMENTS

- Project **GreenSky India** selected as a **semi-finalist** in competition **Nutrients for All** by **Ashoka Changemakers**
- Project **GreenSky India** Blog crossed over **5500 views** covering **73 countries**, and over **350 followers** on **Twitter**
- Selected for **Microsoft Research India Summer School on Distributed Algorithms, Systems, and Programming** in collaboration with the **Indian Institute of Science**, Bangalore, 2012
- Recipient of **Microsoft Research India Travel Grant** (\$900 approx.) for Research Poster Presentation at ACM DEV'12
- Completed **NVIDIA CUDA Architecture and CUDA C Training Program** by NVIDIA Pune, 2010

- Completed Workshop on on **ATmega 16 Microcontroller and Micromouse Robotics** by ISM, Dhanbad & Thinnkware, 2010
- Recipient of **DAVCMC Medal for Outstanding Academic Performance** in **AISSE 2006**

PROFESSIONAL EXPERIENCE

University of California, Santa Cruz

California, U.S.A

Sept. 2014 - Present

Teaching Assistant - CMPS10

Working as Teaching Assistant for "Introduction to Computer Science", with Dr. Nathan Whitehead of the Computer Science Department.

Computer Sciences Corporation India Pvt. Ltd.

Noida, India

Sept. 2012 - March 2014

Associate System Engineer

Working in Database Administration for Oracle and Microsoft SQL Server databases.

Building and maintenance of Oracle 10g, 11g, Microsoft SQL Server 2000, 2005, 2008 database servers.

Scripting in Shell and Perl for maintenance operations in Unix (Solaris) and Linux (RHEL) environment.

M.K.Industries

Ghaziabad, India

Dec. 2011

Technical Intern

Design and development of Company Website. Installation and setup of internal networking system including CentOS Server and Fedora clients.

Embedware

Bangalore, India

June 2010 - July 2010

Trainee Intern

Training on ARM architecture, RTOS concepts and VxWorks.

Implementation and porting of VxWorks on portable boards.

Contributions to Networking project on ARM 9 platform.

PROJECTS

- **GreenSky India** (July 2012 - Present)
 - Web and mobile based system for Indian Agriculture Network providing tools and channel for interaction among agriculture stakeholders
 - Organized training models for distributed development at different levels of Indian agriculture
 - Smartphone Applications for Agriculture support tools designed specifically for Indian farmers and respective average literacy levels.
 - Project selected as a semi-finalist in competition Nutrients for All by Ashoka Change-makers
 - Project Blog crossed over 2500 views covering 56 countries, and over 240 followers on Twitter
 - Research paper *Exploring Suitable Interfaces for Agriculture Based Smartphone Apps in India* published and presented at APCHI, 2013
- **KrishiEkta Information Distribution System** (Jan. 2013 - Present)
 - Information and Knowledge Distribution System for Indian Agriculture
 - Information retrieval from multiple online sources by web crawling and source parsing
 - Categorization of articles based on vocabulary, tags and source

- Distribution of processed and summarized data in multiple output formats for different media
- System built using Python 3, REST API, PySerial and MySQL on Linux
- Research poster *KrishiEkta: Integrated Knowledge and Information Distribution System for Indian Agriculture* accepted for publication and presentation at ACM DEV-4, 2013
- **Sensor based Crop Management Device for farmers** (Sept. 2011 - Present)
 - Designing a hand-held sensor device for assisting farmers with guidance and information access
 - Developing sensor network architecture for relevant soil and weather database generation
 - Providing agriculture solutions to farmers on a mobile interface via Internet/SMS
 - Research poster *Sensor network architecture for soil and weather data extraction and database generation* published and presented at ACM SenSys, 2012
 - Research poster *Concept to design a hand-held crop management device (CMD) for farmers* published and presented at ACM DEV, 2012
- **Community Radio App over Flaky Internet Framework** (May 2012 - Aug. 2012)
Gram Vaani, IIT Delhi
 - Conceptualized, designed and developed Goonj (Jharkhand Mobile Vaani) website for organized online broadcast of crowd sourced data
 - Website developed using Django framework over Python with MySQL database on Linux environment
 - Field trip to Ranchi, for discussions with partnering NGOs of Jharkand Mobile Vaani and understanding mobile handling abilities of community representatives
 - Set up automated database population of the website using HTTP requests and JSON parsing
 - Design and development of Goonj media Android App for Community Radio data collection representatives over a framework meant for flaky internet connections
- **Low cost portable solution for Fundus Imaging** (June 2011 - June 2012)
Funded project at IIT Delhi under Prof. Kolin Paul
 - Integrating two optical testing technologies of Ophthalmology and Fundus Imaging.
 - Initial testing by developing Smartphone App to capture retinal image through Ophthalmoscope
 - Project aimed at providing retinal diagnosis for diabetes and other diseases

TECHNICAL SKILLS

- **Languages :** C, C++, Python, Ruby, Django, Java, HTML5, SQL, Shell, Perl
- **Platforms :** Fedora, Ubuntu, CentOS, RHEL, Solaris, Windows
- **Databases :** MySQL, Oracle, Microsoft SQL Server
- **Softwares :** Eclipse, Android SDK, MATLAB, Adobe Photoshop, Flash, Dreamweaver

EXTRA CURRICULAR ACHIEVEMENTS

- Certified Grade 1 with Distinction in Theory of Music from Trinity College, London
- Certified Grade 1 in Plectrum Guitar from Trinity College, London
- Secured 2nd position in a competition on Customer Relationship Management and Marketing in digital ecosystem in November 2011
- Participated in Model United Nations Conference by DTU, Delhi, Feb. 2012
- Secured 2nd position in State Level Drama Competition by Science Branch, HRD Ministry, Delhi, 2006

- Participated in HT Leadership Debate, Oct. 2009
- Participated in Hero Delhi Cyclothon, Delhi, Oct. 2011
- Participated in BSA Delhi Cyclothon, Delhi, Aug. 2010

MENTORING EXPERIENCE

- Mentoring in Data Mining Lab at IIIT, Noida from Jan. 2012 to May 2012
- Mentoring in Operating Systems Lab at IIIT, Noida from July 2011 to Dec. 2011

SOCIAL ACTIVITIES

- **Farmer centric Application Development, 2013**
 - Study of farmer needs and constraints
 - Participatory development of Application designs for farmer usability
 - Deployment of weather forecasting Smartphone App with special user interface for less literate farmers
- **Field trip to Ranchi for Goonj and Jharkhand Mobile Radio, 2012**
 - Detailed interaction with Community Media Representatives and media personnel
 - Personal discussions with NGOs concerned over Human Rights and Food Security
 - Land Rights discussion with Jharkhand state Tribal leader
 - Planning and layout of solutions for people's problems in rural areas of Jharkhand based on the above
- **Farmer Survey at ICAR Krishi Vigyan Mela, 2012**
 - Designed detailed questionnaire identifying problems faced by farmers from draught prone areas
 - Introduced ICT solutions to farmers with minimal mobile phone usage understanding

OTHER INTERESTS

Guitar, Creative Writing, Poetry, Squash, Swimming, Percussion, Harmonica, Contributing towards social development through literary writing and technology