

Xuan Bao

CONTACT INFORMATION Staff Software Engineer, Researcher
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RESEARCH SUMMARY A large part of my work involves mining large-scale data (sensor, web, location, usage) using machine learning techniques and engineering the proved algorithms into the next generation of mobile platforms and the cloud. Many of my work are published in top research venues such as ACM MobiCom, ACM MobiSys, ACM UbiComp, and IEEE Infocom. And some of the work won recognitions from both the research community and the media (LA Times, ACM tech news, NY Times, Pys.org, Yahoo News, etc.).

EDUCATION **Duke University**, Durham, NC, USA
Ph.D., Computer Science, GPA 3.68, Sept 2013
• Adviser: Professor Romit Roy Choudhury
M.S., Electrical and Computer Engineering, GPA 3.79, May 2010
Beijing Univ. of Posts and Telecommunications, Beijing, China
B.E., Information Engineering, Ranked 11th out of 200 students, June 2008

SKILLS Systems, Machine Learning, Mobile, Backend, Networking, Java (Expert), Matlab (Expert), C++ (Experienced), C (Experienced), Python (Experienced), JavaScript (Used)

INDUSTRY RESEARCH LAB EXPERIENCE *Staff Software Engineer, Researcher, Samsung Research America* **June 2013-Present**

- Top Performer, Supervisor: Jun Yang, Emmanuel Munguia Tapia, Evan Welbourne
- Project I: Privacy Policy Decision Engine. A mobile service that mines users' context (location semantic, activity) and selectively protects users' privacy-sensitive information (location, sensors, etc.) in real time. *Coded in Java, JavaScript*
- Project II: Social Classification. This work aims to mine users' social relationship through mobile communications. *Coded in C++*
- Project III: A Scripting Framework for Mobile Crowdsensing. The platform leverages the computation power of modern mobile devices to distributedly perform state-of-art learning algorithms. *Coded in Java*

Research Intern, AT&T Research **Summer 2012**

- Mentors: Alexander Varshavsky, Emiliano Miluzzo, Kevin Li, Suhrid Balakrishnan, Ramon Caceres
- Project: Content rating based on user reactions sensed through mobile devices. *Coded in Java, Matlab*

Research Intern, Microsoft Research, Redmond **Summer 2011**

- Mentors: Aman Kansal, David Chu, Alec Wolman, Victor Bahl
- Project: Platform for Large-Scale Sensing Applications. A cloud-based platform that stores key features of sensing information and helps new apps to be built on top of them. *Coded in C#*

Research Intern, Bell Labs **Summer 2010**

- Mentors: Uichin Lee, Ivica Rimac, Volker Hilt
- Project: Augmenting overloaded cellular network by offloading traffic through operator-mediated P2P file transfer. *Coded in Java, Matlab*

PROJECTS WITH
MEDIA COVERAGE
OR AWARD

- He Wang, **Xuan Bao**, Romit Roy Choudhury, Srihari Nelakuditi.
Recognizing Humans without Face Recognition.(on Google glass)
[Media Coverage](#): LA Times, CNET, NewScientist, Engadget, Gizmodo, TechCrunch, The Verge, PhysOrg, Business Insider, PCWorld, InformationWeek, Technology Guide,...
Full paper in MobiSys 2015, ACM HotMobile, 2013
- Chuan Qin, **Xuan Bao**, Romit Roy Choudhury, Srihari Nelakuditi.
TagSense: A Smartphone based Approach to Automatic Image Tagging.
[Media Coverage](#): ACM TechNews, The Hindu, news observer, popular science, Network World, TG Daily, Science Daily, Macworld, gizmag, Yahoo, Bellingham herald
ACM MobiSys (Full paper + Demo), June 2011
- **Xuan Bao**, Songchun Fan, Alexander Varshavsky, Kevin Li, Romit Roy Choudhury.
Automatic Content Rating via Reaction Sensing
ACM UbiComp (Best Paper Honorable Mention), 2013
- **Xuan Bao**, Romit Roy Choudhury.
VUPoints: Collaborative Sensing and Video Recording through Mobile Phones.
ACM MobiHeld (with ACM SigComm), Best Paper, August 2009
Selected to ACM SIGCOMM Computer Communication Review, January 2010
Won Runners-up in MobiCom 2010 Research Competition

PATENTS

- [1] **Xuan Bao**, Uichin Lee, Ivica Rimac. Bell Labs.
Methods of Locating Data Spots and Networks and User Equipment.
US Patent Granted, U.S. Serial No. 12/885,914
- [2] Paramvir Bahl, Aman Kansal, Romit Roy Choudhury, David Chiyuan Chu, Alastair Wolman, Jie Liu, **Xuan Bao**. Microsoft Research.
Virtual Sensor Development.
US Patent Granted, U.S. 20130159223
- [3] Jun Yang, Zhixian Yan, Lu Luo, **Xuan Bao**, Haipeng Zhang, Emmanuel Munguia Tapia Methods and Systems for On-Device Social Grouping.
US Patent under review, U.S. Serial No. 14/271604
- [4] **Xuan Bao**, Lu Luo, Emmanuel Munguia Tapia, Evan Welbourne, Jun Yang.
Electronic System with Privacy Mechanism and Method of Operation Thereof.
US Patent under review, U.S. Serial No. 14/323620
- [5] **Xuan Bao**, Yifei Jiang, Jun Yang, Danny R. Bennett.
Localization using Converged Platforms.
US Patent under review, U.S. Serial No. 14/311138
- [6] Kevin Ansia Li, Alex Varshavsky, **Xuan Bao**, Romit Roy Choudhury, Songchun Fan.
AT&T Research, Duke University.
Method and apparatus for content rating using reaction sensing.
US Patent under review, U.S. 20130339433 A1

SELECTIVE
PUBLICATIONS

- [7] He Wang, **Xuan Bao**, Romit Roy Choudhury, Srihari Nelakuditi.
Visual Fingerprinting and Applications.
ACM MobiSys, 2015
- [8] **Xuan Bao**, Jun Yang, Zhixian Yan, Lu Luo,
Yifei Jiang, Emmanuel Munguia Tapia, Evan Welbourn.

CommSense: Identify Social Relationship with Phone Contacts via Mining Communications.

Invited Paper, IEEE MDM 2015 (Mobile Data Management)

- [9] Chuan Qin, **Xuan Bao**, Romit Roy Choudhury, Srihari Nelakuditi.
TagSense: Leveraging Smartphones for Automatic Image Tagging.
IEEE Transactions on Mobile Computing 2014 (IEEE TMC)
- [10] Evan Welbourne, Pang Wu, **Xuan Bao**, Emmanuel Munguia-Tapia.
Crowdsourced Mobile Data Collection: Lessons Learned from a New Methodology.
ACM HotMobile, 2014
- [11] **Xuan Bao**, Songchun Fan, Alexander Varshavsky, Kevin Li, Romit Roy Choudhury.
Automatic Content Rating via Reaction Sensing
ACM UbiComp (Best Paper Honorable Mention), 2013
- [12] **Xuan Bao**, Mahanth Gowda, Ratul Mahajan, Romit Roy Choudhury.
The Case for Psychological Computing.
ACM HotMobile, 2013
- [13] He Wang, **Xuan Bao**, Romit Roy Choudhury, Srihari Nelakuditi.
Recognizing Humans without Face Recognition.
[Media Coverage](#): LA Times, CNET, NewScientist, Engadget, Gizmodo, TechCrunch, The Verge, PhysOrg, Business Insider, PCWorld, InformationWeek, Technology Guide,...
ACM HotMobile, 2013, Demo in MobiSys 2014
- [14] **Xuan Bao**, Yin Lin, Ivica Rimac, Uichin Lee, Romit Roy Choudhury.
DataSpotting: Exploiting Clustered Mobile Devices to Offload Cellular Traffic.
IEEE Infocom (Mini Conference), 2013.
- [15] **Xuan Bao**, Aman Kansal, Romit Roy Choudhury, Victor Bahl, David Chu, Alec Wolman.
Help Mobile Apps Bootstrap with Fewer Users.
ACM UbiComp, September. 2012
- [16] Chuan Qin, **Xuan Bao**, Romit Roy Choudhury, Srihari Nelakuditi.
TagSense: A Smartphone based Approach to Automatic Image Tagging.
[Media Coverage](#): ACM TechNews, The Hindu, news observer, popular science, Network World, TG Daily, Science Daily, Macworld, gizmag, Yahoo, Bellingham herald
ACM MobiSys (Full paper + Demo), June 2011
- [17] **Xuan Bao**, Trevor Narayan, Ardalan Amiri Sani, Wolfgang Richter, Romit Roy Choudhury, Lin Zhong, Mahadev Satyanarayanan.
The Case for Context-Aware Compression.
ACM HotMobile, March 2011
- [18] Ionut Constandache, **Xuan Bao**, Martin Azizyan, Romit Roy Choudhury.
“Did You See Bob?”: Human Localization using Mobile Phones.
ACM MobiCom, September 2010
- [19] Naveen Santhapuri, Justin Manweiler, Souvik Sen, **Xuan Bao**, Romit Roy Choudhury, Srihari Nelakuditi.
Sensor Assisted Wireless Communication.
IEEE LANMAN (Invited Paper), May 2010
- [20] **Xuan Bao**, Romit Roy Choudhury.
MoVi: Mobile Phone based Video Highlights via Collaborative Sensing.
ACM MobiSys, June 2010

- [21] **Xuan Bao**, Romit Roy Choudhury.
VUPoints: Collaborative Sensing and Video Recording through Mobile Phones.
ACM MobiHeld (with ACM SigComm), **Best Paper**, August 2009
ACM SIGCOMM Computer Communication Review V.40, January 2010

REFERENCES
AVAILABLE TO
CONTACT

Prof. Romit Roy Choudhury (romit.rc@duke.edu; phone:217-300-7577)

- Associate Professor, ECE and CS, University of Illinois at Urbana-Champaign, *My PhD supervisor in Duke.*

Dr. Alexander Varshavsky (varshavsky@research.att.com; phone:973-360-8010)

- Senior Member of Technical Staff, AT&T Labs, Research, *Internship mentor*

Dr. Kevin A. Li (kevinli@research.att.com; phone:510-484-8978)

- Principal Member of Technical Staff, AT&T Labs, Research, *Internship mentor*

Dr. Aman Kansal (kansal@microsoft.com; phone:425-707-6931)

- Researcher, Microsoft Research, Redmond, *Internship mentor*

Prof. Bruce Maggs (bmm@cs.duke.edu; phone:919-6606523)

- Professor, CS, Duke University *PhD Committee*