

A.B.M. Musa
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RESEARCH INTERESTS

Networked systems, wireless networks, mobile systems, mobile sensing.

EDUCATION

PhD (ongoing) in Computer Science Aug 2009 – Present
University of Illinois at Chicago (UIC)
Advisor: Jakob Eriksson

BS in Computer Science and Engineering Jan 2008
Bangladesh University of Engineering and Technology (BUET)

RESEARCH EXPERIENCE

Research Assistant May 2010 – Present

BITS Networked Systems Laboratory (<http://cs.uic.edu/Bits>)

- Developing a localization system having higher accuracy than commonplace GPS receivers using computer vision techniques.
- Developed a system [3, 4] to track unmodified smartphones using Wi-Fi monitors.
- Developed an online GPS tracking system [1, 2] that provides a guaranteed bound on error, data-usage and delay.
- Developed a mobile system [5] consisting of multiple Wi-Fi monitors, a GPS receiver, and a spectrum analyzer that can be used to analyze city-wide Wi-Fi characteristics. This system was used to analyze the Wi-Fi characteristics of downtown Chicago.

Research Consultant Nov 2014

ReadMe Systems, Milpitas, CA

- Worked on the design and implementation of Wi-Fi tracking based on our previous work [3,4] for this early-stage start-up.

Research Intern May 2013 – Aug 2013

Wireless and IT Convergence Group

IBM TJ Watson Research Center, Yorktown Heights, NY

Mentor: Theodoros Salonidis

- Designed and implemented a framework [7] for distributing the data and computation of mobile applications in a hierarchical network (mobile-edge-cloud) to achieve improved application performance and optimal system resource utilization.

Research Intern Jun 2012 – Sep 2012

Mobility and Networking Research Group

Microsoft Research, Redmond, WA

Mentor: David Chu

- Designed and implemented an app-centric and context-based mobile socialization platform [8], including a developer API and efficient cloud-based data processing.

TEACHING EXPERIENCE

Teaching Assistant

Aug 2009 – Present

UIC Department of Computer Science

- Assisted in teaching Computer Networks (Fall '12, '11, '10), Computer Architecture I (Spring '10, Fall '09) and Introduction to Programming (Spring '10).
- Developed automated grading scripts for the assignments in the Computer Networks course to provide early feedback to students and accelerated grading.

WORK EXPERIENCE

System Integration Engineer

Jan 2008 – Aug 2009

Core Networks, Network Deployment and Integration

LM Ericsson Bangladesh Ltd.

- Worked on MPBN (Mobile Packet Backbone Network) - IP backbone of Mobile Operators
- Worked on MPLS, MP-BGP, ISIS, OSPF, RSVP-TE, LDP, and VRRP protocols, L2 and L3 VLAN, policy-based routing, QoS using Diffserv and ACL for MPBN

PUBLICATIONS

1. *A.B.M. Musa*, James Biagioni, and Jakob Eriksson. “Trading off Accuracy, Timeliness and Uplink Usage in Online GPS Tracking”, In IEEE Transaction on Mobile Computing (**TMC**), 2015.
2. James Biagioni, *A.B.M. Musa*, and Jakob Eriksson, “Thrifty Tracking: Online GPS Tracking with Low Data Uplink Usage”, In Proceedings of the 21st ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (**SIGSPATIAL'13**). ACM, New York, NY, USA, 496-499.
3. *A.B.M. Musa* and Jakob Eriksson. “Tracking unmodified smartphones using Wi-Fi monitors”, In Proceedings of the 10th ACM Conference on Embedded Network Sensor Systems (**SenSys '12**). ACM, New York, NY, USA, 281-294.
4. *A.B.M. Musa*, Jakob Eriksson, “Demo: WiFlow: Real-time Travel Time Estimation using Wi-Fi Monitors”, In Proceedings of the 9th ACM Conference on Embedded Networked Sensor Systems (**SenSys '11**). ACM, New York, NY, USA, 429-430.
5. *A.B.M. Musa*, Jakob Eriksson, “On-Demand, Deploy-Anywhere Wi-Fi Diagnostics”, Demo In Proceedings of the sixteenth annual international conference on Mobile computing and networking (**MobiCom '10**), ACM, New York, NY, USA.
6. Asif Iqbal, *A.B.M. Musa*, Anindya Tahsin, Md. Abdus Sattar, Md. Monirul Islam, and K. Murase, “A Novel Algorithm for Translation, Rotation and Scale Invariant Character Recognition”, In SCIS & ISIS, Sep 17-21, 2008, Nagoya, Japan, pp. 1367-1372.

PATENTS

7. Theodoros Salonidis, *A.B.M. Musa*, Seraphin Calo, Murtaza Jafar, Executing Data Stream Processing Applications in Dynamic Network Environments, International Business Machines Corporation (in submission).
8. Lenin Ravindronath, Victor Bahl, *A.B.M. Musa*, and David Chu, Application-centric Socialization, Microsoft Corporation, US patent no 13/926778.

AWARDS

- Third place in UIC research forum competition among Engineering and Physical Science (2011)
- Dean's List for excellent academic performance in BUET (2004 – 2007)
- University Merit Scholarship at BUET (2003)
- 9th in the nationwide 12th grade exam at Bangladesh (2002)

SERVICE

Treasurer at UIC Computer Science Graduate Student Association (CSGSA) (Fall 2012 – Spring 2013)

REFERENCES

Available on Request