

**Shegufta Bakht Ahsan**  
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## Research Interests

◇ *Distributed Systems*   ◇ *Internet of Things*   ◇ *Sensor Network*   ◇ *Wireless Network*   ◇ *Mobile Computing*   ◇ *Vehicular Adhoc Network*

## Academics

**University of Illinois at Urbana-Champaign (UIUC)**  
PhD Candidate, Computer Science  
Expected Graduation Date - December 2018

Urbana, IL, USA  
Aug, 2013 - Present

**Bangladesh University of Engineering and Technology (BUET)**  
B.Sc. in Computer Science and Engineering

Dhaka, Bangladesh  
Jan, 2006 - Feb, 2011

## Selected Course Works

◇ *Computer Networks*   ◇ *Distributed Systems*   ◇ *Operating System*   ◇ *Artificial Intelligence*   ◇ *Compiler*  
◇ *Mathematical Analysis for Computer Science*   ◇ *Numerical Method*   ◇ *Discrete Mathematics*  
◇ *Digital Logic Design*   ◇ *Computer Architecture*   ◇ *Computer Graphics*   ◇ *Algorithm*

## Work and Research Experience

### • **Research Assistantship:**

- Working with *Prof. Indranil Gupta* on Distributed Systems. Currently I am analyzing and measuring the performance of Microsoft Service Fabric.
- Previously worked with *Prof. Nitin Vaidya* on wireless network. The focus of the project was to build an intelligent wireless MAC protocol that opportunistically enhances throughput and reduces the backoff time.

### • **Teaching Assistantship:** Data Structures (CS-225), Fall 2013, UIUC.

### • **Microsoft Azure (Intern)**

- **Research Intern:** From May 2016 to August 2016.
- **Research Topic:** Comparing the performance of Microsoft Service Fabric Reliable Collection and other existing NoSQL systems.

### • **Huawei Technologies (Intern)**

- **Research Intern:** From May 2014 to August 2014.
- **Research Topic:** Designing an efficient and lightweight “emergency message” transmission protocol for vehicular network.

### • **Samsung Research Institute Bangladesh (Full Time)**

- **Software Engineer:** From March, 2011 to July, 2013.

- **Department:** Advanced Research and Development Group.
- **Job Responsibility**
  - Devise, implement, optimize and modify algorithms of fifteen Image Effect filters for low powered and low memory devices.
  - Processor specific algorithm optimization.
  - Software Development of the image editing software *Samsung iStudio* for Windows version.

## Skills

- **Programming Skills:** Assembly, C, C++, Java, C#, SQL, PHP, Python.
- **Software and Tools:** Raspbian (Raspberry Pi), Android, NS-2, NS-3, MATLAB, YCSB, YCSB+T
- **Hobbies:** Violin, Photography.

## Publications

- “[Under Submission - HotOS 2017] Service Fabric: A Distributed OS for Building Microservice-based Cloud Applications” - Gopal Kakivaya, Lu Xun, Richard Hasha, **Shegufta Bakht Ahsan** and Indranil Gupta
- “The CAT Theorem and Performance of New Transactional Distributed Systems” - **Shegufta Bakht Ahsan** and Indranil Gupta. Proc. ACM PODC Workshop on Distributed Cloud Computing (DCC) (co-located with ACM PODC), 2016.
- “O-ACK: An Adaptive Wireless MAC Protocol Exploiting Opportunistic Token-Passing and Ack Piggybacking” - **Shegufta Bakht Ahsan** and Nitin Vaidya. Conference on Local Computer Networks (LCN), October 2015.
- “Overheard ACK With Token Passing: an Optimization to 802.11 MAC Protocol” - **Shegufta Bakht Ahsan** and Nitin Vaidya. ACM S3 Workshop, September 2014.

## Patents

- “Method and apparatus for performing image-based searches”- co-authors: Syeda Persia Aziz, A.S.M. Hossain Bari.
- “Electronic device and method for providing information thereof”- co-authors A.S.M Hossain Bari, Sohel Ahmed, MD. Tawhidul Islam Chowdhury, Sadre Ala Parvez, Syeda Persia Aziz.