Mohammad Mobashir

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Education

Present | *Ph.D.* - School of Computing, National University of Singapore, Singapore
Research Area: Internet of Things, Wireless Sensor Networks
Supervisor: A/P Mun Choon Chan

2012 | *Bachelor of Engineering* - Bengal Engineering and Science University, India
Major: Computer Science and Technology
Ranked **2nd** in a class of 60

2007 | *I.S.C* - St. Joseph's College, Kolkata, India
Overall Percentage: 90.8%

Research Experience

Present *(ongoing)* | *Ph.D. Student* - SoC, National University of Singapore, Singapore
Synchronous transmission has been exploited recently to design protocols for fast network synchronization, data dissemination, data collection and all to all data sharing Protocols. My research focus on making synchronous transmission practicle by solving the scalability problem. Meanwhile, I'm also studying the link qualities in outdoor deployments and trying to understand the factors which cause significant degradation in the performance of state-of-the-art sensor network protocols which perform well in indoor environment. In parallel, I maintain Indriya, a three-dimensional wireless sensor network testbed with users from over 75 universities worldwide.
Supervisor: A/P Mun Choon Chan

2009-2012 *(3 years)* | *Undergraduate Research Assistant* - Bengal Engineering and Science University, India
Was involved in two projects on Wireless Sensor Network. The first one in the sophomore dealt with designing a data forwarding scheme having no additional delay to defend jamming attacks in wireless sensor network. The proposed multi-channel scheme based on multi-layer clustered architecture proved efficient through extensive MATLAB simulations. The second project targetting wireless multimedia sensor network resulted in an energy efficient partial discrete cosine transformation based data compression technique for energy constrained devices. These later became a part of the undergraduate final year thesis and resulted in two publications.
Supervisor: Prof. Sipra Das Bit

Work Experience

2016 *(Present)* | *Co-founder and CTO* - Ackcio, Singapore
Reliable Wireless Automated Solution for Construction Monitoring and Analytics

2015 *(3 months)* | *PhD Summer Intern* - Microsoft Research India, Bengaluru, India
Was involved in a project named Software Defined HVAC - Build smart solution for enterprise HVACs (Heating, Ventilation and Air-Conditioning System) without using any 3^{rd} party sensors. Using HVAC as a sensor itself to perform fine-grained occupancy detection and duty cycling its operation to achieve power savings was the final objective.
Supervisor: Dr. Ramachandran Ramjee

2011 *(3 months)* | *Remote Mentoring Project Intern* - IBM, Kolkata, India
Was involved in the creation of a data model to capture coding-standards and developing a parser to check COBOL Program against the defined standards.
Supervisors: Mr. Sripathi R Dantuluri, Mr. Joydeep Banerjee

2011 *(3 months)*
Summer Intern - Saha Institute of Nuclear Physics, Kolkata, India
Was involved in improvising the split and merge clustering technique using rough data set concepts, and applying the modified algorithm on practical data set like IRIS data set to check its efficiency.
Supervisor: Dr. Gautam Garai

2010 *(3 months)*
Vocational Trainee - Moniba Compu Academy Pvt. Ltd., Kolkata, India
Was involved in the designing of a website using ASP.NET which allowed company employees to create an account, post queries or view the answers and comments posted by colleagues under the supervision of a system administrator, who had more privileges.
Supervisor: Mr. Sumit Naik

Teaching Experience

AY 2016/17 *(Semester 2)*
Teaching Assistant - CS4222, Wireless Networking
Involved in taking tutorials.

AY 2015/16 *(Semester 2)*
Teaching Assistant - CS4222, Wireless Networking
Involved in grading of term project.

AY 2015/16 *(Semester 2)*
Teaching Assistant - CS2105, Computer Networking
Involved in taking tutorials, preparing assignment and exam questions.

AY 2014/15 *(Semester 2)*
Teaching Assistant - CS2105, Computer Networking
Was involved in taking tutorials, preparing assignment and exam questions.

AY 2014/15 *(Semester 1)*
Teaching Assistant - CS2105, Computer Networking
Was involved in taking tutorials, preparing assignment and grading.

Publications

2017
- M. Mohammad, M. Doddavenkatappa, and M. C. Chan. Improving performance of synchronous transmission based protocol using capture effect over multi-channels. In *TOSN*. ACM, 2017

2016
- M. Mohammad, X. Guo, and M. C. Chan. Oppcast: Exploiting spatial and channel diversity for robust data collection in urban environments. In *IPSN*. ACM, 2016
- M. Mohammad, X. Guo, and M. C. Chan. Demo abstract: Enabling robust data collection in unplanned cross-technology interference of urban environments. In *IPSN*. ACM, 2016 **(best demo award)**
- X. Guo, M. Mohammad, S. Saha, and M. C. Chan. Psync: Visible light-based time synchronization for internet of things (iot). In *INFOCOM*. ACM, 2016
- M. Mohammad, X. Guo, and M. C. Chan. Demo abstract: Robust data collection despite cross-technology interference in urban environments. In *ICDCN*. ACM, 2016

2015
- M. Mohammad. Tackling self interference, cross-technology interference and channel fading in wireless sensor networks. In *SenSys - Doctoral Colloquium*. ACM, 2015

2014
- R. Banerjee, M. Mohammad, and S. DasBit. Partial dct-based energy efficient compression algorithm for wireless multimedia sensor network. In *CONECCT*. IEEE, 2014

2011
- A. Ghosal, S. Halder, M. Mohammad, R. K. Saraogi, and S. DasBit. A jamming defending data-forwarding scheme for delay sensitive applications in wsn. In *Wireless VITAE*. IEEE, 2011 **(best paper award)**

Computer Skills

Languages:	C, PHP, Java
Web:	HTML, ASP.NET
Database:	MySQL, PL/SQL
Tools:	Vim, Eclipse, SVN, Matlab, OmniGraffle
OS:	Contiki, Unix/Linux, Windows

Awards and Honors

2017
- 1st in NEC Laboratories Singapore Industrial Innovation Competition: NEC Laboratories, Singapore.

2016
- Research Achievement Award: School of Computing, National University of Singapore.
- Best Demo Award: The 15th ACM/IEEE International Conference on Information Processing in Sensor Networks (IPSN 2016).
- Student Travel Grant: The 15th ACM/IEEE International Conference on Information Processing in Sensor Networks (IPSN 2016).

2015
- 2nd in NUS-3MT: National University of Singapore 3 Minute Thesis Challenge.
- Student Travel Grant: The 13th ACM Conference on Embedded Networked Sensor Systems (SenSys 2015).

2013
- 3rd in STePS: School of Computing Term Project Showcase – National University of Singapore.

2012
- National University of Singapore Research Scholarship.
- 3rd in Innovati at EDGE: Techno India Tech Fest.
- 1st in Scribble at Intruo: Bengal Engineering and Science University Tech Fest.
- 3rd in Papyrus at Intruo: Bengal Engineering and Science University Tech Fest.
- 3rd in Technov at Initium: Tech Fest by The Dept. of Mining, BESUS.

Earlier
- Awarded Ashok Kumar Sarkar Under-graduate Fellowship by Mr. Aveek Sarkar, (IIT Kanpur alumnus), California, USA.
- 3rd in C Wizards at Pragati: MCKVIE Techno-Management Fest.
- Microsoft Student Partner in the year 2010.
- Co-founder of ContemSoft, a Tech Club of Bengal Engineering and Science University, conducting sessions on contemporary technologies, in the year 2010.
- 2nd in Junk-E at Intruo: Bengal Engineering and Science University Tech Fest, 2010.
- University Topper: Bengal Engineering and Science University.
- Securing a rank of 3621(over 862000 applicants) in All India Engineering Entrance Examination 2008.

Languages

English:	Fluent (TOEFL IBT August 2011: 108/120)
Urdu:	Native speaker
Hindi:	Native speaker
Bengali:	Conversant