

# Arindam Bose

## Education

**PhD at University of Illinois at Chicago** Expected: May 2018

- Department of Electrical and Computer Engineering
- Concentration: Signal Processing
- Dissertation topic: Optimal Structural Signal Designing (Advisor: Dr. Mojtaba Soltanalian)
- Current GPA 3.6/4.0

**B. Tech at West Bengal University of Technology** 2008 - 2012

- Department of Electronics and Communication Engineering
- DGPA 8.66/10.0

## Professional Experience

**University of Illinois at Chicago**

**Research Assistant** July 2016 - Present

- WaveOPT lab at Department of Electrical Engineering
- Assisting and collaborating with Dr. M. Soltanalian in the research of structural signal designing and working towards PhD thesis.

**Teaching Assistant** August 2015 - Present

- Department of Electrical Engineering and Department of Physics
- Collaborated with several professors to setup exam questions and answers
- Graded papers, conducted lab sessions, and proctored examinations.

**Research Assistant** January 2015 – June 2016

- Computer Vision lab at Department of Electrical Engineering
- Assisted and collaborated with Prof. Jezekiel Ben-Arie in the research of optimization of various algorithms of Activity Recognition using Microsoft Kinect.

**Cognizant Technology Solutions India Pvt. Ltd**

**Programmer Analyst** April 2013 – July 2014

- Health Care practice domain
- Developed and maintained several Java based web projects according to client requests
- Designed Web Services and complex web pages in JSP, HTML, JavaScript.

## Publications

**Journal Papers**

- **A. Bose**, M. Soltanalian. "Constructing Binary Sequences with Optimal Peak Sidelobe Level: An Efficient Analytical – Computational Interplay", submitted in *IEEE Transactions on Information Theory*.
- S. Maiti, C. Agarwal, **A. Bose**, S. K. Sarkar. "Robust Data Hiding Technique in Wavelet Domain Using Saliency Map", published in *International Journal of Advances in Engineering and Technology (IJAET)*, Volume 6, Issue 4, August – September 2013.
- S. Maiti, **A. Bose**, C. Agarwal, S. K. Sarkar, N. Islam. "An Improved Method of Pre-Filter Based Image Watermarking in DWT Domain", published in *International Journal of Computer Science and Technology (IJCST)*, Volume 4, Issue 1, January – March 2013.

- S. Sarkar, **A. Bose**. “Face Detection and Tracking System”, published in *International Journal of Scientific and Engineering Research (IJSER)*, Volume 3, Issue 10, October – 2012.
- **A. Bose**, S. Sarkar, S. Das. “Helianthus - a Low Cost High Efficient Solar Tracking System Using AVR Microcontroller”, published in *International Journal of Scientific and Engineering Research (IJSER)*, Volume 3, Issue 10, October – 2012.
- **A. Bose**. “Mathematical Time Domain Study of Negative Feedback System Using Limiting Progression”, published in *International Journal of Scientific and Engineering Research (IJSER)*, Volume 3, Issue 9, September – 2012.

#### Conference Presentations

- **A. Bose**, M. Soltanalian. “Non-Convex Shredded Signal Reconstruction Via Sparsity Enhancement”, submitted in *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, New Orleans, USA, March 2017.
- C. Agarwal, **A. Bose**, S. Maiti, N. Islam, S. K. Sarkar. “Enhanced Data Hiding Method Using DWT Based on Saliency Model”, presented in *IEEE International Conference on Signal Processing, Computing and Control (ISPCC)*, Solan, India, September 2013.

#### Book Chapter

- “Deep Learning Neural Networks Design and Case Studies” by Daniel Graupe published by *World Scientific Publishing Company*, 2016.  
**Contribution:** “Case study – Activity Recognition” appeared in chapter 8 and appendices.

#### Research Interests

Structural Signal Designing, Compressed Sensing, Human Activity Recognition.

#### Computer Skills

##### Language

Assembly, C, C++, C#, Java, MATLAB, VHDL, Python

##### Web Designing Technologies and Libraries

JavaScript, CSS, HTML, AJAX, JSP

##### Mobile Operating Systems

Android Development, AndEngine Game Development Engine

##### Database Management System

MyAccess, MySQL, PL/SQL, SQLite

#### Major Projects and Theses

##### PhD Thesis: Structural Signal Design

July 2016 – Present

Currently focused on following research areas under Dr. Soltanalian at WaveOPT Lab, UIC.

- Non Convex Shredded Signal Reconstruction
- Signal Design for Interference Reduction
- Signal Design for Eye Tracking in Parkinson's Disease Diagnosis and Treatment.

##### Activity Recognition

January 2015 – March 2016

- Worked on optimization of various algorithms of Activity Recognition using Microsoft Kinect under Prof. Ben-Arie at Computer Vision Lab, UIC.

##### Website Designing and Maintenance

- Designed, developed and maintained [www.waveopt-lab.uic.edu](http://www.waveopt-lab.uic.edu) – the official website of WaveOPT lab, UIC.

- Real Time Motion Controlling using Gesture Recognition** 2013
- Presented and critically acclaimed in Science and Engineering Fair organized by Birla Industrial and Technological Museum, WB, India.
- B.Tech final year thesis: Prepaid System for Domestic Energy Meter** 2011 – 2012
- Presented during the final year of undergraduate studies and received an A grade.
- Helianthus - The Solar Tracking System** 2011
- Presented and critically acclaimed in Science and Engineering Fair organized by Birla Industrial and Technological Museum, WB, India.
- Designing and Implementation of a 32-bit Arithmetic and Logic Unit** 2011
- Designed and presented during an internship at Ardent Computech Pvt. Ltd, Kolkata, India.

### Awards and Achievements

- Associate of the Month, Cognizant Technology Solutions, for best performance in the month of May, 2014.
- Winner, The Telegraph Knowhow Innovation Hub, INFOCOM 10-11, jointly organized by The Telegraph, Knowhow and National Council of Science Museums.
- Special Prize, Science and Engineering Fair 2013, 2012, 2011, 2010 jointly organized by Birla Industrial and Technological Museum and National Council of Science Museums, Ministry of Culture, Govt. of India.
- Educational Scholarship from Central Government of India for scoring good marks in Higher Secondary Examination.

### Memberships

- Institute of Electrical and Electronics Engineers (IEEE)** August 2015 – Present  
Student member, Signal Processing Society, Chicago Chapter.
- Society for Industrial and Applied Mathematics (SIAM)** June 2016 – Present  
Student Member.

### Academic Services

- Vice President**, UIC ECE Journal Club September 2016 – Present
- Organized and conducted speech sessions in fortnightly club meetings
  - Organized and presented in educational workshops in every semester
  - Co-edited journal club magazine.
- Project Mentor**, Future Institute of Engineering and Management team January 2013
- Mentored a team of four undergraduate students at Science and Engineering Fair 2013 organized by Birla Industrial and Technological Museum, WB, India
  - Received special prize for the science project.
- Chief Robotics Coordinator**, Future Institute of Engineering and Management 2010 – 2011
- Organized the autonomous robotics competition at Phoenix – the technical festival of Future Institute of Engineering and Management once in every year.
  - Organized and supervised several robotics workshops throughout the year.