

Sampreeti Alam

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Research Interests

Digital signal processing & Image processing, Wireless communication, Communication theory and IT, Networking, System and control, Embedded systems



Education

B.Sc. Eng. (EEE) from RUET

Jan 2006 – Apr 2010

Rajshahi University of Engineering & Technology, Rajshahi, BD
Bachelor of Science in Electrical & Electronic Engineering
CGPA 3.25 on a scale of 4 (Ranked 39 in a class of 125)

Higher Secondary from *New Govt. Degree College*, Rajshahi, Bangladesh
(GPA: 5.00 in a scale of 5)

Sep 2003 – Sep 2005

Secondary Education from *Govt. P.N Girls' High School*, Rajshahi, Bangladesh, (GPA: 4.75 in a scale of 5)

Aug 2003



Employment

Senior Software Engineer for Samsung Electronics

Nov 2010 – present

Solution Lab (*former Advanced R&D Group*)
Samsung R&D Institute Bangladesh (*former Samsung Bangladesh R&D Center*), Dhaka
BD



Research Projects

Undergraduate Thesis at RUET

Apr 2009 – Mar 2010

Study and Performance Comparison of Different Modulation Techniques in Wireless Communication System

*dealt with processing of digital signals over AWGN and Fading Channel
found interesting simulation of digital signals passing through noisy channels and
reconstruction at receiver
under supervision of Dr. Md. Mortuza Ali and Dr. Md. Ruhul Amin*

Research project at Samsung

Feb 2011 – July 2011

DSP software development for camera and channel

DVB-S 'Channel Simulation' and 'Transmitter & Inner Receiver Implementation' using C (Juzzle Simulator). Simulated digital signal modulation over noisy AWGN channel and reconstructed signal at receiver end using SRRC filters.

Research project at Samsung

Jan 2012 – Aug 2013

SoC Verification Platform for FPGA and Post Silicon

*designed a host-target interaction protocol, chalked architecture for the platform and been
developing a dynamic GUI for verification control from host computer*



Professional Projects

R&D project at Samsung with DMC R&D (Suwon, South Korea)

Aug 2011 – Dec 2011

SoC verification and driver development

- Carried on engineering sample chip verification and prepared drivers

R&D project at Samsung

Nov 2010 – Feb 2011

DSP Software development

- μ C/OS-II porting and BSP development

- Development, implementation and modification of prediction based image codec on hardware platform, Reconfigurable Computing.

- Ported and Optimized WebP to run on a reconfigurable processor within time constraints.



Research Highlights

- 'Channel Simulation' and implementation of 'Transmitter' & 'Inner Receiver' using C (Juzzle Simulator) for Digital Video Broadcasting Satellite (DVB-S) - a European standard for Satellite Television. Simulated digital signal modulation over noisy AWGN channel and reconstructed signal at the receiver end using SRRC filters.
- Verified SoC on an Engineering Sample (ES) board and prepared device drivers (C).
- Developed Windows & Linux based platform verification software on target SoC.
- Designed and developed UI with C, C++ & C# (WPF).
- Ported and Optimized WebP image codec and image effect codes for 'reconfigurable processor' within time constraints using instruction level and loop level parallelism.
- Developed, implemented and modified prediction based image codec on hardware platform, Reconfigurable Computing.



Miscellaneous

Class Representative (2008), Section A, Class of 2010, EEE Department, RUET

Participate and organize philanthropic endeavors (e.g. *Rehabilitation of people with physical disability*)



Skillset

Technical knowledge:	DSP, Embedded Systems, Device Driver, ARM, Linux
Programming skills:	C, C++, C#, MATLAB, JavaScript, Visual Basic, Machine language, Assembly language (ARM, x86)
Simulation:	MATLAB, PSpice, Visual Studio
Development:	Object Oriented Design, UML, WPF
Hardware & systems skills:	Porting and optimization of various algorithms on hardware Microcontroller programming, Linux tool chain
Other skills:	Basic windows, office package, open office, Visio
Language skills:	Fluency in writing, speaking, listening and reading English