Amitha Saleem

Mobile Phone: (+65) 9014 5889 / Email: amitha002@ntu.edu.sg

EDUCATION

Nanyang Technological University (NTU), Singapore **Jul 2019 – Jul 2023**

Doctor of Philosophy (PhD in Space Engineering)

- Relevant Modules: Introduction to Spacecraft Design, Space Mission Analysis and Design, Spacecraft Systems Engineering, Neural Network and Fuzzy Logic

Nanyang Technological University (NTU), Singapore **Jul 2017 – Oct 2018**

Master of Science (Communication Engineering)

- CGPA: 4.06 / 5 (Distinction)
- Relevant Modules: Optical Fiber Communications, Antennas and Propagation for Wireless system, Digital Communication, RF Circuits, Advanced Digital Signal Processing, IC packaging, Computer Networks

Mahatma Gandhi University (MGU), India **Aug 2012 – May 2016**

Bachelor of Technology (Electronics and Communication Engineering)

- CGPA: 8.14 / 10 (First Class with Honours)
- Relevant Modules: Digital Electronics, Analog Circuits, Network Theory, Solid State Devices, Control Systems, Digital Signal Processing, Data Structures and Algorithm, VLSI Design, Embedded Systems, Information Theory and Coding.

WORK EXPERIENCE

Satellite Research Centre @ NTU, Singapore **Jul 2019 – Jul 2022**

Research Scholar

- Developed and designed Attitude Determination System (ADS) for SCOOB Satellite in Altium Designer on a 4-layer PCB. The ADS board consist of Coarse Sun Sensor (CSS), Fine Sun Sensor (FSS), 9 degree of freedom IMU along with microcontroller. The analog voltage is digitized using 24-bit Analog to Digital Converter (ADC) operating in daisy chain configuration using SPI Interface. I developed an Arduino C program for the collection of data from sensors. Then the whole ADS bard will communicate with On Board Computer (OBC) through I2C interface via command and response protocol.
- I also worked in testing and customization of Electrical Power System (EPS), and also done orbit simulation test using solar array simulator.
- Gained knowledge in PCB Software Altium, Arduino C Program

Energy Research Institute @ NTU, Singapore **Feb 2019 – Jul 2019**

Research Associate

- Conducted a literature review to develop an Eco-Smart Zero-Energy Street Lamppost, by considering various scenarios for the street lighting strategy, in order to save energy, reduce urban light pollution and keep high level of safety. The strategy can be based on different parameters such as weather conditions, or object approach detection.
- Gained knowledge in wireless communication technology and smart street lighting.

Incredible Visibility Solutions Private Limited, India **Jul 2016 – Jul 2017**

.NET Developer

- Designed web application and website using MVC (Model-View-Controller) technology; Controller receives all requests from the application and instructs the model to prepare the information required.
- IDE - Visual studio; Programming Language – C#
- Database Administrator - Created, processed, maintained, and updated the stored procedure in the SQL server.

RESEARCH EXPERIENCE

Nanyang Technological University (NTU), Singapore **Jul 2019 – Present**

Project: A System Study on Scalable Nanosatellite for Mass Manufacturing

- Developing a web-based Nano Space Mission Analysis and Design (NanoSMAD) Tool to assist designers in designing nano and microsatellites more effectively and efficiently based on a database of approximately 140 earth-orbiting satellites and subsystem components.
- The tool enables the user to provide specifications for mass, volume, power, communication, and pointing requirements to arrive at a preliminary satellite design and generate a Master Equipment List (MEL) for nano and

micro missions. The initial design and MEL can be customized further with more specific inputs or user choice of components from a drop-down menu. The tool implements a web-based GUI framework built using python to make the user's job easier.

Nanyang Technological University (NTU), Singapore **Sep 2017 - Oct 2018**

Project: Development of Android Application for Antenna analysis

- Developed Android Application for Patch, Dipole, Monopole, Horn, Loop, Helical and Parabolic antenna that performs Antenna design analysis and compute efficiency, gain and plot 2D and 3D radiation pattern.
- The application is developed as a learning and research tool for Antenna design. The Software Design Document (SDD) of this developed application can serve as a reference and guidance document for future work in this field.
- Gained hands-on experience in Tools and Technologies (Android SDK, Android Studio, Java, HTML and JavaScript) and extensive research experience in Antenna design.

Mahatma Gandhi University (MGU), India **Jan 2016 - Apr 2016**

Project: Design Floating-Point Arithmetic Unit Using VHDL

- Improved arithmetic unit by a new unit, Floating-Point Arithmetic Unit, which overcomes existing limitations.
- Designed 4 modules of AU with software Xilinx 14.5 using VHDL resulting in better accuracy, high speed and high precision.

INTERNSHIP

Aabasoft Technologies, India **Jun 2016 - Jul 2016**

- Developed .NET project involving web application in MVC Technology and handled special-purpose Database Management System.

Bharat Sanchar Nigam Limited, Government of India **Jun 2014**

- Trainee in Telecom technology
- Familiarizing with Telecommunication networks and the techniques used in BSNL along with an introduction to different hardware used in the telecommunication industry.

HONOURS AND AWARDS

Merit-cum-Means Scholarship Scheme, Ministry of Minority Affairs **Aug 2012 – May 2016**
Government of India

- The objective of the Scheme is to provide financial assistance to the meritorious students belonging to minority communities to enable them to pursue professional and technical courses.

VOLUNTEER EXPERIENCE

- **Programming Skills:** Python**,** Machine learning, C, C#, .NET, Java, PHP, VHDL, SQL, MongoDB, JavaScript, and HTML
- **Software Application:** PyCharm, MATLAB, Xilinx, Arduino, Visual Studio, Android Studio, Microsoft Office Suite
- **Language Skills:** English, Malayalam, Tamil

PUBLICATIONS

- **A 'SMAD' Tool for Nano and Micro Satellites.** Proceedings of the AIAA/USU Conference on Small Satellites, 2021 · Jul 9, 2021
- **Development of Android apps for antenna analysis.** DR-NTU (Digital Repository of NTU), EEE Thesis · Oct 5, 2018
- **Design of Floating Point Arithmetic Unit using VHDL. (2016).** IJSTE - International Journal of Science Technology & Engineering, 2349-784X

VOLUNTEER EXPERIENCE

- **IEEE Women in Engineering International Leadership Conference** - Website & Design Developer Committee, 2022
- **EEE Graduate Student Club (GSC)-** Director of Social Outreach, Singapore, 2020-2022
- **TED x NTU –** Operations and communications Committee Member, Singapore, 2020-2021
- **Horizon Technical Fest -** Head and Event Coordinator, India, 2016
- **National level technical project exhibition and competition** - Event coordinator, India, 2015
- **Techno-Cultural fest -** Organizer and Design Team Lead, India,2014