

Gaurav Agarwal

☎ (+91) 805-083-7120 | ✉ compnaut@gmail.com | 📱 compnaut | 💻 compnaut | 🐦 @compnaut

Education

P.E.S Institute of Technology, Autonomous Institute under VTU, Belgaum

Bangalore, India

B.E IN ELECTRICAL AND ELECTRONICS ENGINEERING

Aug.'13 - May'17

- GPA: 8.95/10.00
- Major Courses: Embedded System, Control Systems, Digital Signal Processing

Kerala Samajam Model School

Jamshedpur, India

I.C.S.E, I.S.C IN PURE SCIENCE WITH COMPUTER APPLICATION

Mar'99 - May'13

- ICSE: 93.4%, ISC: 88.75%

Work Experience

Team Indus (Axiom Research Labs Pvt. Ltd.)

Bangalore, India

TEAM INDUS SKYWALKER, FLIGHT SOFTWARE | INTEGRATED AVIONICS | COMMAND & DATA HANDLING

Jul.'17 - Present, **Intern**: Jan.'17 - Jun.'17

- Developing software systems for **orbital**, **descent** and **surface** phases of the soft landing lunar mission, with onboard state estimation, autonomous attitude correction, lunar terrain feature tracking, active thermal and power control, interface drivers for sensors peripherals and other interfacing cards, with limited fault detection, isolation, and recovery.
- Writing, analyzing, and maintenance of software requirements for **Lander On-Board Computer(L-OBC)**, **Auxillary Flight Computer (L-AFC)** and **Rover On-Board Computer(R-OBC)**. Studying the feasibility with present architecture, providing the solution for each module development and final independent verification and validation.
- Developing L-OBC boot architecture, custom linkers, make system and maintaining different configurations for **Atmel's RAD Hard ATF697FF - SPARC V8** processor operated as bare metal with **Round Robin** scheduler
- Developed framework for **Processor in Loop Simulation (PiLS)** system emulating sensor and actuator electrical interfaces to lander avionics unit. Responsible for regular comprehensive PiLS exercises of the lunar lander avionics system.
- Developing and testing embedded applications for **L-AFC** and **R-OBC** which runs on barebones Linux. Building kernel, firmware for the SoC using Petalinux and Buildroot toolchain.
- Developing frameworks for regression unit, interface and integration level of testing which involves sensor and other interface cards emulation and simulation using **Interface Emulation Card (IEC)** and L-OBC.

Academic Projects

Student Team Lead

Bangalore, India

PISAT- A NANO-SATELLITE PROJECT EXECUTED BY P. E. S. UNIVERSITY LAUNCHED ABOARD PSLV C-35 ON 26TH SEPT'16

Oct.'14 - Dec.'16

- Involved in complete design, development, assembly, integration and testing phase of **PISAT**- an imaging nano-satellite under ex-ISRO experts.
- OBC and ADCS: The subsystem included building real-time software for an imaging satellite in a component base manner which managed overall functionality such as attitude determination, control systems, telemetry and telecommand (RTE) on an **Atmel AT32UC3A0512** micro-processor with bare-metal architecture using Round Robin scheduler.
- Payload: Develop **NanoCam C1U** functionality, operations and test bench for a complete analysis of the setting of the camera parameters.
- Assembly, Integration and Testing: Build robust test system which was used for Avionics bring ups, **On-board in Loop Simulation (OiLS)**, independent verification of telemetry, telecommand, payload interface and ground checkout.
- Mission Planning and Operations: Reviewing and making of the detailed design documents for CDR, PSR, PLR, the sequence of events, PISAT in orbit tracking and post data analysis.

Program Committees

Member	Team Indus Foundation: Giving public talks, organize technical workshops for school/college students
Core Member	IEEE Student Branch , P. E. S University: Organize various technical workshops, talks, and designed yearly magazines.
Core Member	Collegiate Social Responsibility Club (CSR) , P. E. S. University: Organize various social welfare activities.
Secretary	Space Research Club (SPARC) , P. E. S. University: Kickstarted to engage students in space projects and competitions

Awards and Accolades

Jan'16	APCOSEC'16- Asia Oceania Systems Engineering Conference , Published a paper titled "Design of a student satellite -PISAT"	Bangalore, India
May'16	Bronze Award in System Engineering Challenge organized by INCOSE , Presented a Paper Titled "Telemetry and telecommand for PISAT"	Bangalore, India