Aman Abhishek Tiwari

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Education

Indian Institute of Technology Kanpur — Kanpur, India

4 Year B.S. in Physics; — *Jun 2020*

Minor Degree in English Literature; — *Jun 2020*

- **IIT JEE 2014:** Ranked 2194 out of 1.4 million candidates
- **Smart Clock:** Placed first for making an IOT enabled smart watch in Taknik organized by IIT Kanpur
- **IHPC:** Placed second in Internation High-Performance Computing Competition organized by CDAC and Tekriti, IIT Kanpur
- **Merit Scholarship:** Recipient of 1Lac/year in Merit Scholarship at IIT Kanpur

Work Experience

Quazar Technologies Pvt Ltd — New Delhi, India

Undergraduate Embedded Systems Intern (4 months every year) — *May 2015 – December 2019*

- Worked on the development of firmware, driver, and hardware for an 16 channel simultaneous, 100MHz high speed data acquisition system for NDT lab at IIT Delhi
- Wrote the firmware and driver for nanoREV Scanning Tunnelling Microscope and used it to resolve atoms of Highly-Oriented Pyrolytic Graphite and Gold nano-particles.
- Wrote the firmware and driver for a 1MHz bandwidth, 4 channel, programmable gain signal conditioner.
- Designed a PCB for the oscillation control electronics of an Atomic Force Microscope
- Designed a PCB for the High-voltage Amplifier Electronics for the STM
- Wrote the firmware and driver for the nanoVoltmeter capable of measuring voltages as low as 1nV
- Designed a method to create carbon-fiber probes for Quartz Tuning Fork Atomic Force Microscope

Quazar Technologies Pvt Ltd — New Delhi, India

Scientist & Embedded Systems Engineer — *Jan 2020 – Present*

- Led the production, testing, and installation of an 8 channel analog, 16 channel digital, 1MSPS simultaneous data acquisition system for Split-Hopkinson Bar Experiment at IIT Mandi
- Led the design and development of the test stack electronics and related firmware/driver/software for testing the fully automated Chemical Vapour Deposition System
- Led the development of the test stack electronics and related firmware/driver/software for testing the fully automated Cryogenic Physical Properties Measurement System
- Led the development of a top illuminated microscope
- Led the development of synthesis process of monolayer graphene using Chemical Vapour Deposition process
- Led the development of synthesis process of monolayer Transition Metal Dichalcogenides like MoS2 and MoSe2 using Chemical Vapour Deposition process

Projects

IOT Enabled Smart Switch

- An ESP32 based smart switch with inbuilt power meter

2D Maxwell's Equation Solver | *github.com/amanabt/DG_Maxwell* — 2016-2017

- A GPU accelerated package written in python to simulate scattering of light for randomly shaped particles

3 Channel Data Acquisition System — October - November, 2016

- A data acquisition system to fully automate a Seebeck-coefficient measurement instrument.
- The design of this data acquisition system was based on an AVR based MCU and a two channel SAR ADC.
- The device once integrated with the Seebeck Coefficient Measurement Instrument reduced the experiment time from 6 hours to less than 2 hours with only 10 minutes of human intervention required.

Skills

Programming: C/ C++/ Python/ Assembly
Architectures: AVR/ ARM
Protocols: SPI/ I2C/ UART
Developer Tools: ESP-IDF / CMake / Make / Continuous Integration / Python Unit Test / Sphinx / Jekyll
Softwares: KiCAD/ gEDA/ SolidWorks/ gMesh
Version Control: GIT / SVN
Userful Libraries: NumPy / SciPy / Matplotlib / ArrayFire
Languages: Hindi (Native)/ English (Professional)/ French (Elementary)