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## SCHOLASTIC ACHIEVEMENTS

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- Secured **All India Rank 241** in **JEE-Advanced-2014** with a percentile of **99.8** among **1.2 lakh** candidates
  - Scored **342 out of 360** in **JEE-MAIN-2014** with a percentile of **99.92** among **12.7 lakh** candidates
  - Achieved **All India Rank 163** in prestigious **KVPY fellowship, 2014** conducted by **DST, Govt. of India**
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## PROFESSIONAL & RESEARCH EXPERIENCE

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### Embedded System Engineer

(May'17 - Jul'17)

*Greetude Energy Pvt. Ltd, Bangalore*

- Designed a **Remote Billboard Surveillance System**, providing periodic images on **Google drive** and **AWS Bucket**
- Developed a **control and debug interface** for the site and **circular logs** for **energy consumption and crashes**
- Devised a **Smart Metering System** for transmission & logging of standard power parameters onto the main server logs
- System included **synchronously reading internal registers** and **space efficient circular logging** of the parameters

### Linux Port to Indigenous AJIT Processor

(Jul'18 - Present)

*Guide: Prof. Madhav P. Desai, IIT-Bombay*

- Member of **Embedded Software Design** team of **India's first** in-house **designed and fabricated processor**
  - Generated and tested an **exclusive AXI-Lite interface DDR Memory controller** for a **32 bit Sparc V8 processor**
  - Conducted memory tests on the Xilinx Virtex 7 Series **FPGA** board with a prototype Microblaze processor.
  - Developed a **PCIe - AXI interface** and verified it with a **custom-developed C driver** for **PCIe peripherals**
  - Generated an **exclusive Memory mapped AXI Stream FIFOs** through **High Level Synthesis** tools
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## KEY COURSE PROJECTS

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### Android 5 Port to ZedBoard

(Jan'18 - May'18)

- **Ported Android 5(Lollipop)** to **ARM Cortex A9** to build a **bare bone IoT infrastructure** on Zedboard
- Developed **First Stage bootloader, Second Stage bootloader** and an **Android patched Kernel** from scratch
- Designed **exclusive HDMI hardware block** and a **GPIO core** using programmable logic segments

### Hexapod Navigation using WiFi RSSI

(Feb'18 - Apr'18)

- Designed a **1.5m × 1.5m indoor localization network** using **Xbee radios** for closed space settings
- Achieved an **average location accuracy of 90%** for indoor setting with an **error bound of ±10cm**
- Calculated location by taking a **moving average of Trilateration algorithm** results on target to node distances

### Walk Smart Vision

(Jan'17 - Apr'17)

- Designed a **3-level navigation** system for the visually impaired people using a **Star network of Xbee radios**
- Conveyed **critical obstacle** information to the user through **surficial vibrations proportional** to the **proximity**
- Demonstrated performance in a **populous setting** with successful navigation by **blindfolded novice** users

### Real Time Audio Compression using MDCT

(Mar'17 - Apr'17)

- Achieved **5x compression** by **redundant data removal** using **Modified Discrete Cosine Transform**
  - Improved **80% efficiency** for storage and transmission of audio signals while conserving **95% signal information**
  - Developed a **compression block** and a **wireless socket block** to compress & transmit the audio in **real time**
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## TECHNICAL SKILLS

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### Programming Languages & HDL Design Tools

Embedded C, ARM Assembly, VHDL, C, C++, Shell Scripting, Python  
Vivado HLS, Xilinx SDK, TI CCS, Intel Quartus

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## POSITIONS OF RESPONSIBILITY

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### Teaching Assistant | Electromagnetic Waves

(Jul'18 - Present)

- Evaluated **answer scripts** and **conducted practice sessions** for a batch of **100+** students in the course
- **Managed logistics** and assisted the professor in **ensuring smooth functioning** of the course and exams

### Overall Music Coordinator | Performance Arts Festival'18

(Feb'18 - Apr'18)

- Secured the **First place** in Performance Arts Festival'18 out of four teams comprising **600+students**
- Won the award for **Best Music** and a **Special mention for Organizing skills** out of **100+ students**
- Was the **principal composer** of the **background score** and an **original composition**.