

SUPRAGYA RAJ

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EDUCATION

Vellore Institute of Technology

Bachelor of Technology in Computer Science and Engineering **GPA: 9.02/10.0**

Chennai, India

July, 2019

Army Public School, Shankar Vihar

Senior Secondary, (PCM + CS), 12th CBSE: **95.6% (aggregate), 98% (CS)**
High School, 10th CBSE, **CGPA 10.0**

New Delhi, India

May 2015

May 2013

EXPERIENCE

Cisco Systems

Software Engineer

July 2019 - Present

- Implementing controller side support for **802.11r (wireless fast transition)**, allowing fast roaming between Cisco enterprise grade WiFi access points, lowering roam times by around **10 times**.
- System level development done in **C** with **test driven development** which is deployed in large enterprises such as **Google, Uber, Facebook, Amazon** etc.
- Developing mapping layer code to translate **openconfig** standard based wireless management to commands usable by Cisco devices: written internally in **erlang**.

Software Intern

Jan 2019 - June 2019

- Designed and implemented heirarchial (pre)download mechanism allowing enterprise grade access points to download device images in a peer to peer fashion which earlier used to be central download based architecture.
- The code reduced load on Cisco wireless controllers and sped up download times from **O(n)** time to **O(logn)**, becoming highly effective in enterprise deployments.

Google summer of code

Mentor, Apertus association

March 2019 - Aug 2019

- Mentored a student in GSoC 2019 to develop a **file system** to serve raw video camera frames in RGB format through a pseudo AVI file making it readable by video players like **VLC** and editor programs like **Adobe Premiere Pro**.

Student Developer, Apertus association

March 2018 - Aug 2018

- Developed a **file format specification** and raw video containering system to save large amount of **streaming data** coming from cinema grade camera on disk. **Saved months of development time** by reusing already existing open source code for encoding and decoding the stream.

Vicara Tech

Software Developer Intern

April 2018 - July 2018

- Developed a Windows service in C# to allow custom software (eg. VLC media player) to be controlled using a gesture control device on Windows platform. The service module was lightweight and allowed very low latency inputs - **less than 10ms** to be provided to the operating system.

PROJECTS

- HLang Language & interpreter**: Developed a scripting language and its interpreter to provide functionalities of Bourne Shell (bash) on an opensource microkernel (HelenOS) operating system.
- AutoTrailer**: Automatic movie trailer generation with a given mood from a movie file by analysing emotions using machine learning.
- DirectorySync**: Using inotify-tools(filewatcher) to sync files and directories on linux systems over a network.
- PiNG12RAW**: RGB image extraction from cell matrix data of a camera sensor. **over 120 forks on github**.

PUBLICATIONS

- Raj S., Chodnekar S.P., Harish T., Sriraman H. (2019) **eMDPM: Efficient Multidimensional Pattern Matching Algorithm for GPU**. In: Tiwari S., Trivedi M., Mishra K., Misra A., Kumar K. (eds) Smart Innovations in Communication and Computational Sciences. Advances in Intelligent Systems and Computing, vol 851. Springer, Singapore.
- Agyeya O., Singh P., Prasad S., Raj S., Thomas Abraham J.V. (2019) **Performance Evaluation of Guest Operating System Following Obliteration of Pre-installed Features**. In: Chaki N., Devarakonda N., Sarkar A., Debnath N. (eds) Proceedings of International Conference on Computational Intelligence and Data Engineering. Lecture Notes on Data Engineering and Communications Technologies, vol 28. Springer, Singapore.

AWARDS AND ACHIEVEMENTS

- Winner, Smart India Hackathon 2019, Goldman Sachs**: Mentored the team from IGDTUW, Delhi in GS problem set - smart transportation held at NIT, Calicut.
- Teaching Assistant, Fall 2019**: Taught Theory of Computation and Compiler Design to a class of over 50 students at VIT Chennai.
- Recommendation by MHRD, India**: Letter of Appreciation by Smt. Smriti Irani, former minister, Ministry of Human Resource and Development, Govt. of India for performance in senior secondary examinations.
- INSPIRE Fellowship**: Recipient of INSPIRE science fellowship (2013-2015), led by DST and DRDO, India.

PROGRAMMING SKILLS

- Programming Languages**: Intermediate: C, C++ | Working Knowledge: Javascript, Python, erlang
- Technologies**: Linux, Cisco Wireless, node.js, AWS