Supragya Raj

Curriculum vitae

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Education

Vellore Institute of Technology — Chennai, India
Bachelor of Technology in Computer Science and Engineering GPA: 8.88/10.0 — *Expected May, 2019*

Army Public School, Shankar Vihar — New Delhi, India
Senior Secondary, (PCM + CS), 12th CBSE: 95.6% (aggregate), 98% (CS) — *May 2015*
High School, 10th CBSE, CGPA 10.0 — *May 2013*

Experience

Google Summer of Code 2018 — *April 2018 - August 2018*
Student Developer, Apertus association

- Developed **raw video containering system** (file format specifications) over high speed USB3 and auxilary Gigabit Ethernet channel from AXIOM Beta (Open Hardware) cameras.
- Introduced interoperability by capturing MLV files (Magic Lantern) from native RAW12 of AXIOM cameras, which was easily saved to DNG sequence, allowing code reuse. This **saved months of development time** on otherwise writing performant code to render industry standard RAW file format.

Vicara Tech — *April 2018 - July 2018*
Software Developer, Windows Service / .NET / SDK Development

- Developed **Kai Windows service** to allow custom software (eg. VLC media player) and deeply integrated systems to be controlled using a gesture control device on Windows platform.
- Kai Service modules were build to be **light, less that 1MB in size** and allowed operations with **low latency, less than 10ms** (comparable to mouse/keyboard in terms of latency).

Opensouce contributions

OpenCine, Apertus Association — *February 2018 - Ongoing*
OpenSource contributor, Qt / C / C++

- OpenCine is a raw processing tool designed from the ground up to process CinemaDNG MXF / MLV files.
- Developed **libfuse-FrameServer**, serves proxy AVI from CDNG sequence / MLV processed by OCcore in the backend.

HelenOS — *March 2017 - September 2017*
OpenSource contributor, non POSIX C

- HelenOS is a microkernel Operating System with a standard, working microkernel design, however lacked fully functional shell system.
- Developed **HLang** scripting language for writing automatic regression testing for nightly builds.

Projects

- **DirectorySync**: Using inotify-tools to sync directories on linux systems over a network.
- **PiNG12RAW**: RAW12 image debayering and channel extraction tool.
- **RpiSpectrumWave**: Audio wave spectrum visualiser (VUmeter) on Common cathode display without driver circuit.
- **Linpak**: Distro specific package installer, written for bash. Used by Open Source: VisMa (Visual Math) and OpenCine.
- **MJMLNewsletter**: An MJML based newsletter generation system using handlebars and nodeJS, Used by Apertus.
- **AirSense**: Economic air sensing device (INR 500) for actively controlling HVAC, connects to ThinkSpeak for data analysis.

Publications

- **eMDPM: Efficient Multi Dimentional Pattern Matching on GPU**, submitted and accepted in ICSICCS 2018, to be published by Springer Intl' Book series. Expected October, 2018.

Awards and achievements

- **Recommended by MHRD, India**: Letter of Appreciation by Smt. Smriti Irani, former minister, Ministry of Human Resource and Development, Govt. of India
- **INSPIRE Fellowship**: Recipient of INSPIRE science fellowship (2013-2015), led by Dept. of Science and Technology and DRDO, India
- **Host, Student Symposium** on security fundamentals and system interactions, VIT Chennai, 2016
- **Coordinator, GameJam 2.0**: conducted and judged a 24-hour long hackathon on game development (Unity 3D), VIT Chennai, 2017

Skills and relevant proficiencies

- **Languages**: C, C++, C#, Python, Java, JavaScipt
- **Technologies**: Qt, ReactJS, NodeJS, Heroku, GCE, AWS
- **Courses**: Machine Learning - Caltech, Advanced Algorithms - Harvard University