

Education

- 2017 **Fractals & Scaling**,
Santa Fe Institute,
Percentage – 84%.
- 2016 **Introduction to Complexity**,
Santa Fe Institute,
Percentage – 91%.
- 2009 – 2010 **Post Graduate Diploma in Industrial Automation System Design**,
DOEACC, Formerly CEDTI,
Calicut,
Percentage – 92%.
- 2005 – 2009 **Bachelor of Engineering in Electronics & Communication**,
Pallavan College of Engineering, Anna University,
Kancheepuram,
Percentage – 80.15%.
- 2005 **Higher Secondary School**,
Infant Jesus Matriculation Higher Secondary School,
Kancheepuram,
Percentage – 83.66%.
- 2003 **Secondary School**,
Infant Jesus Matriculation Higher Secondary School,
Kancheepuram,
Percentage – 78.72%.

Technical Proficiency

OS **GNU/Linux.**

Prog. .

Languages C, C++, Vala, PYTHON, HTML, CSS, JS, L^AT_EX

Dev Tools **Development, Documentation, Interaction.**

- Latexilla, LYX, Kile, GIMP, Inkscape, LibreOffice
- IDE: Emacs, Eclipse, Geany, Builder, Atom
- Processing, GTK, Glade, Conky
- Git version control
- Android Studio, QT

Prototyping **Software Stacks for Building, Integration, Prototyping.**

- Buildroot
- Fritzing
- Puredata
- GNURadio, GRC
- Pothosware

Design **Computer Aided Design.**

- FreeCAD*
- OpenCascade*
- KiCAD
- Antimony
- FontForge

Physical Computing **Physical Prototyping Platforms**

- **Microcontrollers**
 - Arduino - AVR, ARM
 - Beagle Bone Black - OMAP
 - Raspberry Pi Zero - BCM
 - Samsung SOC - S3C6410
 - NodeMCU - ESP8266
- **Network of Things***
 - RIOT OS
 - Influx DB
 - Grafana

Geo Informatics **Open GIS Platforms.**

- Open Street Maps, Humanitarian Mapping - HOT
- JOSM, iD, Offline first [VTM, Mapeo, Maputnik]
- GRASS, QGIS, Web Mapping Services, POSM

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Statistics & **Data Analytics.**

- Machine Learning ○ Orange3
- Learning ○ Scikitlearn

Complexity **Modeling Platforms.**

- Modeling ○ Gephi* - Graph based Informational networks, flow, etc
- NetLogo* - for Agent based Modeling, Behavioral Modeling
- Golly

* - basics

Technical Experience

2018 – now **Coop Member**, COOPON PUDUCHERRY.

- Become a member of Cooperative - [Coopon sci. tech.](#)
- As tech. cooperative involved in practicing alternative economic model as a way of self sustenance while involving in collaborative projects adapting long proved Cooperative principles and strategies.
- Involved in design and development of Social Transport System alternative to address local issues using decentralized and federatable technologies for Transport. (Android Mobile application & Web services)
- Involved in Tamil Vernacular Manuscript preparation for Dr.Senthil Babu research focusing on Tamil measurements, volumes, areas and weights by designing fonts from scratch, and using LaTeX to prepare the manuscript.
- Involved in designing Android application development, to address Mother-Child health care as a part of Research for Dr.Jayalakshmi of JIPMER Social & Preventive Health Care unit.

2017 – 2018 **Research Assistant**, FRENCH INSTITUTE PUDUCHERRY.

- Collaborated with Dr.Anne Casile in ERC Asia project to collect, curate, analyze and visualize archeological data of Vidharbha region of Maharashtra to know explore paleo hydrology aspects of the region.
- Used completely FOSS tools and frameworks for curation, & Data visualization.
- Hosted Tilemill at IFP test server to hold the resultant data so that it can be served remotely for the researchers.

2015 – 2017 **Collaborative Research.**

- Researched availability, accessibility of [Open Data to use it with Open GIS tools](#) for local geo awareness, maps, cartography, collaborative mapping.
- Studied Commons Based Peer Production, Alternative Economic models, Use of Agent Based Modeling to interpret & analyze societal infrastructures.
- Involved in testing Community Networks with available Hackable Wifi Routers, Practicing Self Hosting web services, Teaching decentralizable Network of Things.
- Participated in Community learning - Cooperative Economics course by Athabasca University
- Actively contributing to **Bridge/Support** services & apps. Design and Development adapting Cooperative Economics - by being part of local cooperative initiative

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2012 – 2015 **Research Intern**, CSIR-CEERI, CSIR Madras Complex.
Involved in Free/Open Systems Integration.

○ **Hacking & Development**

- Demonstrated GUI Development using GNOME's GTK library & Vala.
- Hacked existing Grating Monochromator system & made it reusable with the Free ecosystem.
- Hacked GNOME System Monitor application & understood how data visualization works.

○ **Systems Integration**

- Integrated Embedded Systems development stack using completely Free Tools & demonstrated it's functionality.
- Design, Development & Integration of Optical source excitation system & deploying it for Surface roughness measurement.

○ **Digital Augmentation**

- NIR AOTF Spectrophotometer was equipped with Free Embedded, Standalone, Web software layers.
- Laboratory Computer was updated with GNU/Linux distribution, Server applications.
- Introduced free tools for Documentation, Data Mining, Data Analytics, Data Visualization, Machine Learning, Designing, Prototyping, Development & System Integration.

○ **Learning**

- Learned Spectroscopy to significant depth & understood more generally about ElectroMagnetic field theory.
- Learned about evolution of Grating technology.
- Learned basics of Chemometrics.

○ **Proposals**

- Proposed Laboratory instrument automation using completely Free solutions.
- Proposed Democratizing Laboratory Data to public domain.
- Proposed Low cost Grating maker technique.

2011 – 2012 **Project Assistant**, CSIR-CEERI, CSIR Madras Complex.
Involved in Systems Integration.

- Learned basics of Spectroscopy & tools necessary for implementation.
- Used general Systems Integration guidelines & applied it for NIR (Near Infrared) AOTF (Acousto Optical Tunable Filter) spectrophotometer.
- Designed & Wired analog signal processing unit for NIR AOTF Spectrophotometer.
- Used available proprietary packages such as Visual Basic, Keil for immediate development. Determined to change the platform after demonstrating the negatives of those proprietary systems.
- Updated & Maintained the Software both in the embedded & supervising layer.
- Teamed up with ISRO & published a paper based on the spectral measurement of NIR AOTF system.

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2009 – 2011 **Project Engineer**, DOEACC, Calicut.

Developed SCADA for Level, Pressure control pilot plant used for testing & practicing control system strategies.

- Learned basics of Systems Integration & Visualization, Mathematical Modelling.
- Learned Systems Integration using industrial tools.
- Tested cascaded control system strategy for pressure control of closed tank.
- **Realized how proprietary tools create dependency & subjugation while obscuring the knowledge built into the system.**

Community Involvement

ILUGC **Indian GNU/Linux Users Group Community.**

- 2009 Came to know about ILUGC
- 2013 Gave a talk at Anna University for Software Freedom Day
- 2014 Presented a lightning talk at Jaya Engineering College for Software Freedom Day

FSM's **Free Software Movements.**

- 2010 Introduction with local Free SW Movements: FSFTN, FSHM, FSMK, FIST
- 2013 Gave a talk at Anna University for Software Freedom Day
- 2016 Since, Volunteered for Camps, Conferences on Free HW, Open Science, Open Data, Open Research
- 2017 Till now, indulged in collaborative research in Community NW's, Cooperatives
- 2018 Volunteering as resource person for Community Comm. N/W's, Embedded Systems N/W 'ing

SIARS **South Indian Amateur Radio Society.**

- 2013 Got introduced to SIARS
- 2014 Applied for Amateur Radio Station Operation Certification Examination
- 2014 Participated and Integrated a Software Configurable HAM radio with Community help
- 2015 Helped Organizing and Participated in Yelagiri HAM - Homebrewer's meet

MaitriSSC **Maitri Social Science Collective.**

- 2017 Got introduced to MaitriSSC
- 2017 Participated in Coastal Commons deliberation
- 2017 Involved in few field trips to Choonambedu Village panchayat to learn how prolonged industrial production of alkali salt derived from the salt lake resulted in possible ecological damage and socio-economic, labour problems in the nearby villages.

Independent Research

2016 – Now **Making Sense of Systems.**

Laying a Independent path with Freedom, Hack, Research, Development philosophy

- Data collection from 2010 to present about the proprietary food products. Referred the data with E Number database & Food Chemical codex. Reports are generated for the same. (Planned to use spectroscopic data measurement & evaluation methods)
- Collaborative Mapping - Collective contribution Process, Tools, Data.
- [Grating Maker](#) - a semi-theorized instrument to make low cost gratings using FOSH tools.
- **Policy Research:** Collated Information, Statistics, Socio-Economic complexities of [Unique Identification Systems](#) - its intrusion into informational privacy, identity; enclosure & volunteered for [public campaign](#) - criticizing its socio-technical architecture.
- Part of Sciece-Technology platform Coop initiative.
- Using Agent based Modeling, Behavioural Modeling & Gaming platforms for simulating and understanding Complex systems

Publications

- 2014 – 2015
- [Collaborative peer production as an alternative to hierarchical internet based business systems.](#)
 - Knowledge ecosystem for creative commons and communities using free & distributed technologies.

Hobbies

- Learning and Solving Rubiks Cube
- Cooking
- Drawing, Digitization, Reading and Creating Comics
- Writing Articles, Policy Research, Engaging Public Campaigns
- Tracking Community Projects
- Trying out Free Software based applications
- Managing personal knowledge using Wiki
- Hacking Electronic Equipments
- Amateur Radio (although i have not yet built my own radio)

Languages

Tamil **Mothertongue**
Telugu **Intermediate**
English **Intermediate**

Conversationally fluent

Conversationally fluent

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