

Sibi Sankar

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WORK EXPERIENCE	Software Engineer Location: Visteon, Chennai. [website] Role: Connectivity Team, Bluetooth.	<i>Sept 2015 - Present</i>
	Co-founder, Chennai Makerspace Location: Chennai, India. [Website] Role: Event Organising and Core Technical Team.	<i>June 2015- December 2016</i>
	Research and Development, Intern. Location: Mango Ventures LLP, Ahmedabad, India. Role: Developed a MVP for Desktop 3D Laser Scanner.	<i>July 2015- Aug 2015</i>
EDUCATION	Bachelor of Engineering, Electrical and Electronics [website] SSN College of Engineering, Kalavakkam, Tamil Nadu, India.	CGPA: 8.35/10.0 <i>June 2011 - May 2015</i>
	Senior Year, High school [website] Union Christian Matriculation HSS, Nungambakkam, Chennai, Tamil Nadu, India.	Score: 96.25/100 <i>June 2010-April 2011</i>
SKILLS	Languages & Libraries : Embedded-C, C++, Python, Swift, Open-CV, OpenNI 2.2, Nite 2.0, Marlin Firmware, IOS 9/10 SDK, Theano, Tensorflow. Protocols: Bluetooth EDR: [HF, A2DP, AVRCP, PBAP], I2C, SPI, UART, Socket TCP/UDP. MicroControllers: Arduino Series, MSP430, T4C123G, Beaglebone Black, Raspberry Pi series, Spartan 3E Nexys 2, Intel Galileo Gen 2 Tools: IAR Embedded Workbench, Keil, VIM, X-Code, Visual Studio, KiCad, Solid Works, Git, Unity 3D, RTC, Matlab, Final Cut Pro.	
TECHNICAL ROLES:	Ford's In-Vehicle Infotainment System - Connectivity component Role: Software Engineer, Connectivity Team, Visteon. Summary: Connectivity software to realise BT connectivity features of B515 product variant infotainment system and deliver the product in iterative, agile software lifecycle. Features developed: Developed BT middleware to tailor to the customer requirements based on Open-Synergy BT Stack for the following. <ul style="list-style-type: none">• Connection management for BT Auto-Connection Sequence, E-assist and Multi-Profile sequence.• Phonebook download thread synchronisation, A2DP data sink client and AVRCP Browse Client. Technical Expertise: <ul style="list-style-type: none">• Obtaining and analysing BT HCI/Air Trace using BPA 600, HCI Trace Probe, Sodaera.• Maintenance of Bluetooth Init script for TI Wilink SOC module, PTS Bluetooth Certification Testing and Rhodes and Swartz BT Tester.• MISRA Complaint Embedded C application development in a MQX RTOS environment with mutex, semaphores, queues, ring buffers and linkedlists.	<i>Sept 2015 - Present</i>
PROJECTS	Omnipresence: A Virtual Reality based Telepresence robot. [Github Repository] <ul style="list-style-type: none">• Developed a omni-directional modular robotics platform for full telepresence VR immersion with Natural interaction control using RGBD camera with (Nite 2.0) (Open Ni 2.2) and onboard phone IMU.• Project won 1st runner up at HackIndia Hackathon and best Idea at ITC VR hackathon. MHFScanner: High Resolution Laser Scanner [Github Repository] <ul style="list-style-type: none">• Developed a High Precision laser scanner capable of exporting scanned objects as meshes to extract geometric dimensions in high resolution using rapid prototyping techniques. LOCK: Kinematically Feasible Path Planning [Github Repository] <ul style="list-style-type: none">• Implemented A* based search on the captured live image to find the optimal path through a obstacle maze optimised for kinematic feasibility of the differential drive system. Localisation based on colour	<i>Dec 2015 - Feb 2016</i> <i>July-Aug 2015</i> <i>Jan-Feb 2015</i>

contour detection.

- Project won for two consecutive years at *Apollo18* and *Kronicles of Mars* organised at NIT Pragyan and Kurukshetra (International Tech-Fest).

EmoBot - Realtime CV on Embedded Hardware

July 2016

- Facial landmarks were detected using dlib library and feature set was extracted from several face datasets and run realtime on raspberry pi2.
- Project won Top Five position at Harman Connected World Hackathon.

Open-Fly: Low-cost Quadcopter Autopilot

July 2014- April 2015

[\[Github Repository\]](#)

- Responsible for implementation of the three-channel PID controller for roll,pitch and yaw control on Spartan 3E FPGA using Matlab/Xilinx(ISE) and low cost autopilot PCB/Firmware in Arduino.

Aero-Thrust Pendulum: Feedback Linearisation and control

July 2014- April 2015

[\[Github Repository\]](#)

- Responsible for implementation of the single-channel PID controller with anti-reset for aero-thrust pendulum on Spartan 3E FPGA using Matlab/Xilinx(ISE)

1 QLB: Q Learning based optimal energy management bot

March-June 2015

[\[Github Repository\]](#)

- Developed a Q Learning agent with standard python libraries for optimal energy management in solar micro-grid and was extended to CQ-learning with multiple agents.

ACHIEVEMENTS

- **Chennai Makerspace** featured as one of the **20 best maker spaces** in India.[\[link\]](#)
- **Chennai Makerspace** in spotlight as one of the **top 10 places in India** for people to innovate, build and invent.[\[link\]](#)
- **1st** Runner up in the Indias biggest hackathon **HackIndia 2015**, among the 80+ teams that participated.
- Featured as one of the best ideas in **ITC VR Hackathon**, 2016.
- Secured **top 5 position** in **Harman Connected World** hackathon.
- Won the **1st** place as a part of *Team ERF* in the event *Rush Hour*, a line follower robotics event organized during *PRAGYAN 2015* an international level Tech Fest, conducted by NIT, Trichy.
- Won the **3rd** place as a part of *Team ERF* in the event *Apollo 18*, an image processing based robotics event organized during *PRAGYAN 2015* an international level Tech Fest, conducted by NIT, Trichy.
- Won the **2nd** place as part of *Team ERF* in the event *Kronicles of Mars*, an image processing based robotics event organized during KURUKSHETRA 2015 conducted by College of Engineering,Anna University, Chennai.

PUBLICATIONS

[\[Abstract Links\]](#)

- Sanjay Shreedharan., *Sibi Sankar.*, Senthil Kumaran Mahadevan. **MATLAB System Generator based Feedback Linearization and PID Control of Aero Thrust Pendulum using FPGA.** *Aust. J. Basic & Appl. Sci.*, 8 (18): 466-472, 2014 .[\[pdf link\]](#)
- Leo, R.; Milton, R.S.; *Sibi Sankar.*, **Reinforcement learning for optimal energy management of a solar microgrid**, Global Humanitarian Technology Conference - South Asia Satellite (GHTC-SAS), 2014 IEEE vol., no., pp.183,188, 26-27 Sept.[\[pdf link\]](#)
- Leo Raju, *Sibi Sankar*, Milton R S, **Distributed Optimization of Solar Micro-grid Using Multi Agent Reinforcement Learning.** International Conference on Information and Communication Technologies,2014 , Elsevier Computer Procedia, Science Direct[\[pdf link\]](#)

RELEVANT

COURSEWORK

- **Introduction to Computer Science and Programming** Nov 2013-Jan 2014
(Edx MIT Xseries) [\[verification link\]](#)
- **Introduction to Computational Thinking and Data Science** Mar-May 2014
(Edx MIT Xseries) [\[verification link\]](#)
- **Embedded Systems - Shape the World** Feb-July 2014
(EDX University of Texas Austin) [\[verification link\]](#)
- **From Nand To Tetris** Mar-June 2015
(Coursera Hewbrew University of Jerusalem) [\[verification link\]](#)
- **Machine Learning** Mar-June 2014
(Coursera Stanford University) [\[verification link\]](#)
- [\[Other Relevant Coursework\]](#)