

PrithviRaj Narendra

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I'm a co-founder of Appiko, an early stage start-up whose mission is to develop technology for wildlife conservation. I care about sustainability and conservation of the environment. I am proficient with embedded systems and lean iterative development cycle of designing, prototyping and testing for mass manufacturing.

Skills

Hardware

PCB Design Eagle, KiCad

Hands-On SMD soldering, analog & digital debugging

Electronics Circuit Design

Digital Design

Analog Design

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Software

Languages C, Embedded-C ●●●●●

Python, bash scripting, C++ ●●●●●

HTML, Java, C#, Assembly ●●●●●

Protocols BLE, I2C, UART, SPI ●●●●●

CAN, Ethernet ●●●●●

USB, 6LowPAN ●●●●●

Tools Eclipse, GCC, Keil, IAR, Android Studio, Git, Doxygen, L^AT_EX

Know-how μ C optimized coding, sensor/actuator interfacing, power optimization, algorithm to embedded firmware development

Experience

Working

Oct 2017 – **Co-founder, Appiko, Bengaluru.**

present As a co-founder I've to keep track of Appiko's big picture while making sure that the day to day firefighting activities are progressing well. I've led and taken part in the development and manufacturing of long-range animal warning systems and low-power low-cost app-controlled camera trapping equipment. During this period I have learnt to lead and delegate all the aspects of setting up and running a start-up, including business development, financial accounting, recruitment, brand development and cultivating an envisioned company culture.

Aug 2015 – **Embedded Engineer, Lofelt, Berlin.**

Jan 2017 I was part of the small engineering team that made Basslet a reality, from a spaghetti of wires connecting dev boards to an on-time delivered Kickstarter product in just over a year. Basslet is a bracelet that lets you feel the bass in music. It's essentially a wearable sub-woofer. My responsibilities were designing the electronics at the schematic level and firmware development. Particularly I worked on the design of the low-latency, low-power streaming protocol, overall firmware architecture development, User Experience (UX) implementation, power optimization and in-factory test routine development.

Nov 2014 – **Firmware Engineer, BluVision, Berlin.**

Apr 2015 I mainly worked developing firmware for the CC2650 Chip, which drives the Bluetooth Low Energy (BLE) Beacons by BluVision. Specifically, I interfaced a light and motion detection sensors, developed the complete Host Controller Interface (HCI) layer and developed firmware for customer specific applications. I also developed Android apps to configure beacons and log advertisements. I've got an idea of Design for Manufacturing (DFM) in both hardware and software, with experience in a factory in China. Finally, It was a good experience learning the do's and don'ts when managing a start-up.

Oct 2011 – **Research Assistant - Wildlife Researchers' Gadgets Maker,**

Jul 2012 *Department of Electronic Systems Engineering, Indian Institute of Science, Bengaluru.*

Being the project assistant for Dr. André Pittet I was involved in the complete product design cycle of fabricating gadgets such as camera traps and animal collars for wildlife researchers, which had specific requirements such as low cost, ruggedness and weeks of battery life. My tasks included features decision, design, implementation and testing of the enclosure (3D modelling), electronics (PCB schematics, routing and soldering) and software (embedded software, windows PC application, android application)

Publication

- Oct 2015 **BLE & IEEE 802.15.4 in the IoT: Evaluation & Interoperability Considerations**, *Proceedings of the International Conference on Interoperability in IoT (EAI InterIoT 2015)*.

Academic

- Jan 2014 – **Master Thesis - Comparison of link layer of BLE and 802.15.4**,
Sep 2014 *Swedish Institute of Computer Science, Stockholm*.
I ported the Contiki-OS and Bluetooth Low Energy (BLE) protocol to a nRF51 SoC platform and secondly to compare various performance criteria such as data rate, latency, reliability and energy consumption with 802.15.4 based MAC layers (ContikiMAC and Null-RDC).
- Sep 2013 – **Member, MicroGrid Project 2013**, *Technology Transfer Alliance, KTH, Stockholm*.
Jan 2014 In this project we designed a 2nd generation a MicroGrid network intended to create a local power network in rural and remote regions. This network consisted of a central server managing an efficient MicroGrid of distributed DC-DC converters nodes with CoAP messages. The function of these node units running on Contiki-OS was to keep the voltage steady within the central grid while using heterogeneous power sources such as solar energy, batteries and super-capacitors.

Projects

- Aug 2010 – **Team Leader**, *Project STUDSAT-2*, Bangalore.
June 2011 STUDSAT-2 again was a satellite project by students from various colleges across India. As the team leader of STUDSAT-2 for a year, I had both technical and management roles. My major tasks included conducting management meets, recruiting students, managing the project timeline and raising funds. My technical work was focused on the use of a real-time operating system's (FREE-RTOS) features for satellite applications and developing a prototype of the checkout system. I also led the process of analyzing and selecting the different micro-controllers and interfacing the on and off-chip peripherals.
- Feb 2009 – **Team Member**, *Project STUDSAT-1*, Bangalore.
June 2010 I developed the entire electronics and software for the CMOS camera payload for this nano-satellite, using a 0.3 megapixel monochrome image sensor to take images of 95 m resolution. I also was part of the team that developed a simple scheduler based Operating System for the satellite.

Education

- Sep 2012 – **Masters in EIT ICT Labs Master School**,
Sep 2014 Major in *Embedded Systems*, Minor in *Innovation and Entrepreneurship*.
Year 1: *Technische Universiteit Eindhoven*, Eindhoven, Netherlands
Year 2: *KTH Royal Institute of Technology*, Stockholm, Sweden
- Sep 2007 – **Bachelors in Electronics and Communication**, *RV College of Engineering*, Bengaluru.
May 2011 Best Outgoing Student Award from the Electronics & Communication Dept. for the 2007-11 batch.

Additional Experience/Volunteer

- Mar 2017 – **Driving Force**, *Embedded for Her* program, Bengaluru.
Aug 2017 Embedded for Her is a skill development program in the field of embedded systems for women to increase the gender diversity in this domain. As a volunteer at FSMK, I led this program full-time. I handled all aspects of the program with assistance from the other volunteers.
- Feb 2015 – **Event Officer**, *EIT ICT Labs Alumni Board*.
Nov 2015 Primary task of facilitating and supporting the creation of events by the Alumni and current students.
- Sep 2009 – **Secretary**, *IEEE RVCE Chapter*.
May 2010 Apart from being the secretary, I organized paper presentations and robotics workshops.
- Volunteer/Member**, *Miscellaneous groups and organizations*.
Was secretary at SCIFI, TU Eindhoven for 6 months; volunteered for 8 months at an NGO to help children at a school for visually impaired; organized many events in a student group called 'Geekopreneurs' in KTH for 6 months.

Further Info

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Github github.com/EarthLord

