Anuj Deshpande

Embedded Systems and OS
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PROFILE

I have been working in the domain of embedded systems for the past 9 years. I have been involved in design and execution of customer products. This has included firmware, integration with cloud services and occasionally, schematic reviews. My most recent job was at Balena, an IoT fleet management company, where my last role was working on their custom Linux OS.

EDUCATION

- Pune Institute of Computer Technology, University of Pune
  First Class in Bachelor of Engineering in Computer Engineering, 2014

SKILLS

- C, Embedded Linux, RTOS

- Scripting experience with Bash, Python

- Simple web apps using JavaScript, React, and AWS/Cloudflare

- GitHub, GitLab CI/CD

WORK EXPERIENCE

OS Engineer, Balena Inc.
Remote — 2022-2023

- Add new board support (imx8plus) for Yocto based balenaOS

Hardware Engineer, Balena Inc.
Remote — 2019-2022
- RTOS firmware development for external coprocessors for Linux SBCs

- Built tools for faster hardware design and development using Typescript and GitHub CI/CD

- Built a GitHub Action to automatically make project landing pages

- Tested and certified hardware products balenaFin, and EtcherPro. Included EMI/ EMC pre-certification testing, as well as environmental testing - this was especially useful in reducing the high costs of certification

Embedded Systems Engineer, Espressif Semiconductors
Pune — 2017-2019

- Part of the Applications Framework group, working on projects like Alexa SDK, ESP Rainmaker, and more

- Used serverless frameworks to create simple web apps to support IoT development

- Added Bluetooth Audio support for Espressif's Alexa implementation

- Built different integrations with AWS - S3, Lambda, IoT, DynamoDB

Contractor, Marvell Semiconductors
Pune — 2015-2017

- Responsible for Open Source SDK (EZConnect Lite) for 88MW300 WiFi microcontroller

- Manufactured a low cost development board that was featured on Hackaday

- Built different integrations with AWS - Lambda, IoT

Founding Engineer, Revealing Hour Creations
Pune — 2014-2015

- Successfully crowdfunded a BLE development board - https://www.crowdsupply.com/revealing-hour-creations/tah

- Was responsible for manufacturing, marketing, and firmware[1]

Intern, BeagleBoard.org as part of Google Summer of Code
Remote — 2013

- Built userspace libraries for running Arduino code as is on embedded Linux (BeagleBone Black)
- The project was later reused by Intel for their Linux SBCs

Intern, Oneirix Labs
Pune — 2012

- Built a prototype for patented image sensing technology

- Developed firmware using C, Python and GNU Octave for complex matrix operations

PUBLIC PRESENTATIONS

Ever since my first job after college, I have been evangelizing the products and services that were built by the teams that I was a part of.

Some of the talks that I have presented are as follows -

Date	Title	Event	Link
June 2023	Zephyr 101	IoTPune meetup, Pune	Recording
April 2020	Scaling Embedded Linux Devices from Prototype to Production	Live stream for Balena	Recording
March 2019	Voice assistants on Tiny, Low Cost Microcontrollers	FOSSAsia, Singapore	Recording
March 2019	ESP Jumpstart (later renamed to ESP Rainmaker)	FOSSAsia, Singapore	Recording
March 2017	Integrating voice in your products	India Electronics Week, Bangalore	Slides
February 2016	Exploring AWS IoT	Helium Ink meetup, Pune	Recording
January 2016	Beacons, Eddystone and the Physical Web	Droicon India, Bangalore	Recording
September 2014	Hardware Dashboard for DevOps	Deccan Ruby Conf, Pune	Recording

OTHER LINKS

LinkedIn   https://www.linkedin.com/in/deshpande-anuj/

GitHub   https://github.com/anujdeshpande/