

Contact

www.linkedin.com/in/itankar
(LinkedIn)
itankar.com (Personal)
github.com/itankar (Other)

Top Skills

C
Embedded Systems
RTOS

Languages

English (Professional Working)
Hindi (Professional Working)

Publications

Spatially and Temporally Directed Noise Cancellation Using Federated Learning

Automatic Generation of Push Notification Alerts of Approaching Emergency Vehicles

Dynamic contextual searches to assist teachers

Piyush Itankar

Embedded System Software Engineer at Google
Bangalore Urban

Summary

I am personally interested in Hardware-Software co-design/development for solutions which need to be:

- scalable
- fast
- maintainable

using RISCV/ARM, FPGA(verilog/system verilog), Linux and C (or assembly, C++, Python).

I am comfortable working with huge code bases. I like working in teams and on projects that involve a multi-disciplinary touch (System level, Hardware level, firmware level etc). Absolutely love mentoring and leading tech teams.

[Google]

I spend most of time and a lot of mental horse power on:

- Low level C (and assembly) code.
- Developing Hardware Abstraction layer.
- Developing Device Drivers.
- Operating system internals.
- Hardware bringup.
- Reverse engineering hardware/software architecture.
- Debugging.
- Mentoring junior embedded engineers on the team.
- Leading a power/clock management team (of 2)

Everyday Tools: C, Python, ARM, RISCV, Little Kernel, Linux, Simulators etc

[Intel]

I worked as a Embedded Software Engineer, spent most of time on:

- Implementing drivers and stack for Bluetooth (Primarily in C and Python).
- I've also coded firmware modules (memory manager and some math algorithms) for a GNSS chip during my internship at Intel.

- Worked on Bluetooth RF characterization and developed software tool to control the RF Peripheral registers of the controller discretely.

[Others]

I spend most of my free time digging into Software-Hardware Design. You can browse through few of my projects (put on github): <https://github.com/pitankar>

Some projects that I am proud of are:

- RISC-V Board support package (WIP): <https://github.com/itankar/riscv-sw>
- RISC-V CPU implementation (WIP): <https://github.com/itankar/riscv-cpu-rtl>
- FPGA: Hardware Designs: <https://github.com/itankar/FPGA-Designs>
- Round Robin Scheduler for ARM-M controllers: <https://github.com/itankar/arm-rtos>
- Linux Device Driver: https://github.com/itankar/kernel_drivers

Experience

Google

Embedded System Software Engineer

July 2019 - Present (2 years 1 month)

Bangalore

Jack of all trades Embedded.

Intel Corporation

4 years 2 months

Software Development Engineer [Bluetooth RF]

June 2018 - July 2019 (1 year 2 months)

Bangalore

[Since June 18]: Responsible for RF chain analysis and development of software required to tweak the RF parameters externally using C and Python. Responsibilities include studying the Bluetooth RF chain behavior for the ISM frequency band, calibrating and programming RF peripheral registers to ensure compliance with Bluetooth specification.

Software Development Engineer [Bluetooth Stack]

June 2016 - June 2018 (2 years 1 month)

Bangalore

[Nov 17 - Jun 18]: Led a team of college graduates to design and develop GUI extension for a debugging tool (in Python and PyQt) that could allow establishing a control path to the Bluetooth controller via the 'Host control Interface' protocol over USB, UART and Socket (for Virtual Platforms) interfaces. The tool enables discretely controlling the Bluetooth activities to be able to reproduce bugs and do code testing on real hardware. Responsibilities included cracking the architecture of the pre-existing parts of the software, designing data-structure and interfaces to tap the transaction flow over the hardware interfaces, handle the asynchronous command and event handling, modular and scalable modules, development of GUI in PyQt, mentoring, task assignment, follow-up and delivery of the tool.

[Dec 16 - Oct 17]: Developed and delivered UEFI drivers for Bluetooth Stack (in C). Responsible for working under a tech lead to design and deliver Vendor configuration driver which would download Firmware to Bluetooth controller as part of boot up, Keyboard and Mouse report mode drivers and FTDI driver for triggering a custom hardware for latency measurement of wireless transactions of click events.

[June 16 - Nov 16]: Worked in team of Six under a Systems Architect to develop and deliver the A2DP (Audio profile for classic Bluetooth) profile (in C) to Zephyr open source IoT project.

Graduate Technical Intern [Firmware Development]

June 2015 - June 2016 (1 year 1 month)

Bangalore

Worked with GNSS Firmware development group. Responsibilities included delivering on the development tasks assigned as part of which have developed a memory-manager (in C) that handled memory allocation for a 2kB space, designed and developed a math library (in C) to compute distance between two points over the surface of Earth, bring up of pre-silicon development virtual platforms, static analysis of Firmware to compute memory and time requirement for on chip memory design requirements.

Education

School of Information Science, Manipal

Master's Degree, Embedded Systems · (2014 - 2016)

G.H Raisoni College of Engineering, Nagpur
Bachelor's Degree, Electrical Engineering · (2009 - 2013)