# Avinash Jayakar

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## Experience

**Staff Software Engineer** **Jan 2022– Jul 2023**

*Itron, Inc.*

- Worked as a full stack developer
- Responsibilities included adding new features to the meter data management application, which was being ported from monolith to micro-services architecture
- Technology stack used here was Angular with NgRx for state management, .NET core with C# for developing REST Apis and Azure Devops for project management.
- Also handled automated deployments to development, test systems and implemented automated test pipeline to run the regression suite after each feature was complete.

**Software Engineer** **Jul 2019– Dec 2021**

*Itron, Inc.*

- Developed Automated Regression tests for new features being developed for Meter data management.
- Gained domain knowledge on the electric meter wholesale and retail settlements.
- Implemented several tools for performance bench marking of newly added event notification feature.

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## Projects

**Inter-procedural null dereference analysis in Java programs** **Oct 2023– Nov 2023**

*IISc, 2023*

- Null Pointer Exception is a common run-time error in Java programs. The aim of the project is to perform an analysis of the given Java file and report all the points where null deference issues may happen.
- Link to repository

**Evaluate dilated convolution on different high performance architectures** **Oct 2023– Nov 2023**

*IISc, 2023*

- As part of the High performance computing course, we fixed a problem of dilated convolution and applied as many optimizations using the knowledge of hardware.
- On CPU side, common techniques like code motion, loop unrolling were used and in order to use data level parallelism we used intel's intrinsic to use the SIMD instructions in the CPU with boosted the execution time by about 80%.
- Also implemented the same in CUDA with multiple variations to optimize the warp's execution pattern to obtain optimal runtime.

**Diagnosis of osteoporosis using X-Ray images** **May 2018– Jul 2018**

*Summer Internship Programme, NITK*

- Made use of multiple passes of image processing algorithms and 3D deformation algorithm in order to model 3D structure of a meta-carpal bone using just X-Ray images, in order to measure the bone density
- As opposed to CT scan, this method serves as a cheaper alternative to get an initial diagnosis of osteoporosis.
- Link to publication

## Education

**Indian Institute of Science** **Aug 2023 – Present**

*M.Tech, Computer Science and Automation, CGPA 8.3 (1 semester)*

**National Institute of Technology, Surathkal** **Aug 2015 – May 2019**

*B.Tech, Electronics and communications, CGPA 7.4*

## Skills/Interests

C, C++, Java, C, Python, JavaScript, TypeScript, CUDA, Linux Kernel, Compiler Design, Program Analysis, Functional languages, SIMD processing, Algorithm Design