

Kumudha Narasimhan *Software Engineering Manager*

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📄 in/kumudha-narasimhan 🆔 https://dblp.org/pid/208/1873.html

SUMMARY

Software Engineering Manager with 10+ years of experience. Strong technical background in optimizing applications across diverse architectures, with a passion for building teams that are inspired to deliver impactful, business-aligned results. Skilled in leading multiple teams with empathy and purpose, fostering motivated and high-performing environments.

SKILLS

Performance-Tuned Libraries: oneDNN, oneMKL, ONNX Runtime

Programming Language: C++, SYCL, CUDA, Python

EU projects managed: AERO (open cloud acceleration), SYCLOPS (AI acceleration)

Application and libraries: cuBLAS, cuDNN, CUTLASS, llama.cpp

Social: Agile methodologies, non-violent communication, mentoring / coaching, process design and audit, onboarding, mental health / neurodiversity awareness.

EXPERIENCE

Software Engineering Manager,

Jan 2023 – Present | Edinburgh, UK

Codeplay Software (Intel Subsidiary)

- **Managed 4 specialized Agile teams** working on: optimizing *llama.cpp* for Intel GPUs, developing a SYCL backend for CUTLASS, creating a hardware portable backend for oneDNN, and optimizing SYCL for CPUs. Defined and maintained roadmaps, tracked deliverables, and ensured timely execution across these teams and 2 EU projects, aligning efforts with broader division priorities.
- **Drove goal-setting and progress transparency** by coordinating division wide OKR reporting, maintaining company workboards, and implementing change requests based on evolving team needs.
- Provided **people-focused leadership** to 18+ engineers through regular 1:1s, feedback, performance reviews, onboarding support, and handling HR related issues across internal transitions.
- **Collaborated across functions** (HR, Agile coaches, infrastructure, leadership) to support team health, improve internal processes, enable team learning, and guide organizational initiatives.

Senior Staff Engineer, Codeplay Software

Nov 2020 – Dec 2022 | Edinburgh, UK

- **Led SYCL integration efforts** for projects like ONNX Runtime and implemented features in libraries such as portBLAS, portDNN and portFFT to optimize performance on heterogeneous hardware.
- **Co-authored and contributed to several peer-reviewed publications** (PMAM 2022, TACO 2023, P3HPC 2022) by driving technical content, managing review/rebuttal processes, and presenting results at major conferences and client demos.

- **Improved engineering workflows and technical processes** by establishing CI pipelines, improving reproducibility, defining merge request review protocols, and supporting ISO audit readiness through systematic best practices.

Staff Software Engineer, Codeplay Software

Sep 2019 – Nov 2020 | Edinburgh, UK

- Contributed to adding cuBLAS and cuDNN backends into oneMKL and oneDNN to enable GPU acceleration portability for these libraries. Collaborated with compiler teams to develop SYCL features to enable SYCL as a backend for ONNX Runtime.
- Optimized neural network inference on custom hardware for real-time performance as part of a customer-facing project.
- **Published research** on deep learning performance optimization in top-tier venues (ICS 2021, P3HPC 2020) - tile size selection model and cross- platform DNN portability.
- **Presented SYCL tutorials** and major events, including IWOCL 2021 and Intel Dev Summit 2021.

Senior Software Engineer, Samsung Research India

Jul 2018 – Jul 2019 | Bengaluru, India

- Analyzed **custom profilers and debuggers** for Samsung Tizen native and web applications, enhancing their functionality based on IoT team requests.
- Investigated and resolved issues reported in the Tizen Studio IDE to improve developer experience.
- Coached colleagues for the professional-level internal competitive coding exam, focusing on data structures and algorithms.

Technology Analyst at Investment Banking Division,
Goldman Sachs

Jun 2012 – Jul 2015 | Bengaluru, India

- Building and standardizing frameworks in C# .NET and Java for all applications developed within the division with **focus on scalability and performance**.
- Inherited several C# projects and led their sustenance, ongoing development, and enhancements, including re-architecting the resource discovery system, entitlement system, and provisioning system.
- Communicated effectively with internal and business stakeholders, inducted and mentored new joiners, and resolved multiple critical issues within deadlines while managing expectations.

EDUCATION

Indian Institute of Science, M.Sc. Engineering Research,
Dept of Computer Science and Automation

2018 | Bangalore, India

Research: High Performance Computing & Compilers | Advisor: Uday Reddy

- **Optimized Geometric Multigrid (GMG) computations** using a DSL-based approach to improve performance and programmability for PDE solvers with complex multigrid cycles integrated in PolyMage. [SC 2017]
- Developed compiler-level optimizations for affine loop nests with a fast, **lightweight tile size selection model** for affine loop nests integrated into PolyMage and Pluto. [ICS 2021]

M S Ramaiah Institute of Technology, Bachelor of
Engineering, Dept of Computer Science and Engineering

2012 | Bangalore, India