

Kumudha Narasimhan *Software Engineering Manager*

✉ kumudhakn@gmail.com 📍 United Kingdom 🔗 kumudhan.github.io/

📄 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 IWOCCL 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,

Jun 2012 – Jul 2015 | Bengaluru, India

Goldman Sachs

- 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*,

2018 | Bangalore, India

Dept of Computer Science and Automation

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*

2012 | Bangalore, India

Engineering, Dept of Computer Science and Engineering