

SUDHANSHU KULKARNI

Software Developer

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 San Francisco, CA

An earnest **Software Developer** bringing deep research and application-oriented profile to the table. My years of experience ensure clean, efficient software, and I'm diving headfirst (*coffee in hand!*) into the exciting worlds of HPC, Quantum Computing, & Software Development.

EXPERIENCE

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|------------------------------------|---|
| 08/2024 - present | Technical Solutions and AI Architect - OXMAINT INC , <i>Startup in Silicon Valley, CA</i> <ul style="list-style-type: none">Led the integration of Artificial Intelligence throughout the SaaS product, embedding automation into core workflows, slashing manual effort by 40%, and elevating user engagement metrics by 3x.Crafted AI-Agents and ML models enhancing 6+ core CMMS modules handling enterprise-grade industry operations, for predictive analytics, performance optimizations, and genAI while prioritizing security and scalability. |
| 11/2022 - 05/2024 (1 yr, 7 mos) | Graduate Research Assistantship - SAN FRANCISCO STATE UNIVERSITY , <i>San Francisco, CA</i> <ul style="list-style-type: none">Formulated feasibility studies on performing scalable FFT computations 'in situ' on HPC platforms leveraging CPU, GPU & Quantum hardware to support scientific analysis workloads in exascale NERSC projects like WarpX.Devised a novel FFT numerical library in C++ for distributed-memory massively parallel processing architecture. Collaborated with scientists at the LBNL supercomputing facility to conduct extended research, achieving a minimum of 10x speedup in computation time compared to traditional methods. |
| 05/2023 - 08/2023 (3 mos) | SDE Intern - AMAZON WEB SERVICES (AWS) , <i>Seattle, WA</i> <ul style="list-style-type: none">Prototyped a robust monitoring service to ensure timely capturing of critical metrics to enhance service reliability by at least 10% after full-fledged deployment on thousands of live AWS servers worldwide as a part of the AWS CloudFront CDN services' platform team.Curated live dashboards to provide real-time visibility into at least 70% of all the agents running on servers, empowering the team to actively maintain reliability and diagnose potential issues. |
| 08/2020 - 07/2022 (2 yrs) | Software Engineer - ELASTICRUN , <i>Pune, IN</i> <ul style="list-style-type: none">Engineered an enterprise-grade ERP platform on the Frappe framework, streamlining logistics and B2B eCommerce processes, while single-handedly contributing to 20% of the 'Velocity' segment's development workload.Refined ground-level operational efficiency by executing heavy Python-based server-side development, and PWAs using Flutter and SvelteJS as a full-stack developer in an agile software development environment.Orchestrated an automated testing framework and handled bi-weekly live software deployments with the DevOps team based on Kubernetes and GitLab-based CI/CD pipelines, boosting deployment rate and reliability by \approx15%. |







TECHNICAL PROFICIENCY

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| Languages | Python, C/C++, Java, CUDA, TypeScript, Javascript, SQL, Ruby, R, Go, HTML/CSS, bash. |
| Frameworks | SENSEI, Qiskit, cuQuantum, Frappe, Django, Fast-API, SvelteJS, React, Node.js, MySQL, NoSQL, Redis, Helm. |
| Tools | Git, Tensorflow, PyTorch, Keras, SciPy/NumPy, MPI/OpenMP, Linux, AWS, GCP, Azure, Docker/Kubernetes, ElasticSearch, nginx, REST, Linux, PowerBI, Jira. |

EDUCATION

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|------|---|
| 2024 | MS - COMPUTER SCIENCE, San Francisco State University High-Performance Computing, Quantum Computing, Artificial Intelligence, Software Engineering, Advanced Algorithms |
| 2020 | BE - COMPUTER ENGINEERING, International Institute of Information Technology (SPPU) Machine Learning, Data Mining and Analytics, NLP, Cloud Computing, Databases, Data Structures |

NOTABLE EXPERIENCES AND PUBLICATIONS

- Architected a GIS project to perform analysis on multi-spectral & temporal satellite data employing Deep Learning Networks & signal-matching algorithms yielding over 80% accuracy and collaborated with scientists from **ISRO**, **NRSC** & **Geospatial Design Labs**. 
- Open Source Contributor to **SENSEI Project** as a new FFT analysis backed endpoint. 
- An integral member of the Conference Board for the **ISAV workshop at The Super-Computing conference (SC23)**, scrutinizing technical research papers and delivered a talk on **Scalable FFT project research**. Peer Reviewed Abstract : <https://arxiv.org/abs/2402.01843> 
- Pioneered research on quantifying Quantum Encoding models to optimize the Hybrid Classical-Quantum interface.
[HiPC-IEEE \(in press\)](#)  | [ArXiv](#)  | [GitHub](#)  | [IBM Quantum Challenge '24 Achievement](#) 