Sai Kaushik Sudhakaran

Associate Software Engineer

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EXPERIENCE

IIT DELHI | SENIOR RESEARCH FELLOW UNDER DR. SMRUTI RANJAN SARANGI
October 2024 - present | Delhi, India

- ➔ Working on TEJAS Architectural Simulator to add an ultra-fast simulation theoretically achieving MIPS, inspired from Sniper Architectural Simulator.

Technology Stack: Java, Python, C++

KLA - TENCOR SOFTWARE | ASSOCIATE SOFTWARE ENGINEER
July 2023 – August 2024 | Chennai, India

- ➔ Acquired knowledge of the semiconductor domain and its production cycle.
- ➔ Resolved bugs and feature requests in a 3-tier application.
- ➔ Executed performance and stress tests on Oracle DB CRUD using C++ libraries (Pro*C, Rogue Wave and OCCI).
- ➔ Designed and implemented UI elements for the application using C# WPF.

Technology Stack: C++, C#, WPF, Oracle DB, Git, Azure, Docker, RHEL Servers

KLA - TENCOR SOFTWARE | SOFTWARE INTERN
January 2023 - June 2023 | May 2022 – October 2022 | Chennai, India

- ➔ Worked on a desktop application that collects logs from the system based on user-specified inputs.
- ➔ Redesigned a web application that generates the throughput report from user-uploaded logs.
- ➔ Developed a web application that reduces the creation and deployment of VMs on VMWare servers by 12x from 2 hours to 10 minutes.

Technology Stack: Python, React, Java, Spring, .NET, Angular, VMWare vSphere

PROJECTS

LORENZ ATTRACTOR PARALLELIZATION ALGORITHM ⦿

- ➔ Visualization of Lorenz Attractor using the Lorenz Equations. Using OpenMP, MPI, and CUDA to improve the performance in multi-core CPUs, cluster computers and GPUs respectively.
- ➔ Achieved a 12% gain in performance with the OpenMP implementation of the same

Technology Stack: C, OpenGL, OpenMP, MPI, CUDA

VLIW SIMULATOR ⦿

- ➔ Simulation of a 32-bit 5-stage pipelined VLIW processor with an input of an assembly file, and monitor the updating processor register file.
- ➔ Attained 100% accurate outputs with the generated processor.

Technology Stack: Python3, Verilog

KEY DISTRIBUTION CENTRE (KERBEROS) ⦿

- ➔ A multi-threaded GUI application for secure server-client communication by issuing multiple encrypted tickets.
- ➔ The 3 servers created include a chat application, a multiplayer quiz platform, and a file transfer application.

Technology Stack: Python3, PyQt5

SKILLS

PROGRAMMING

Proficient:
C • C++ • Python • C#

Experienced:
Java • JavaScript • SQL • LATEX

Familiar:
Kotlin • Powershell Script

LIBRARIES/FRAMEWORKS

PyTorch • TensorFlow
Django • Spring
.NET Core & Framework • WPF
React • Angular

TOOLS/PLATFORMS

Git • Microsoft Azure
Visual Studio • VS Code
Docker • Kubernetes
gRPC • Postman

EDUCATION

INDIAN INSTITUTE OF INFORMATION TECHNOLOGY, DESIGN AND MANUFACTURING, KANCHEEPURAM
B. TECH. AND M. TECH. IN COMPUTER SCIENCE AND ENGINEERING WITH SPECIALIZATION IN SYSTEM DESIGN
July 2018 - May 2023 | Chennai, India
CGPA: 8.78 / 10

ACHIEVEMENTS

SECURED 93.5 PERCENTILE IN GATE 2021 (CS PAPER)
2021
QUARTER FINALIST IN SWADESHI MICROPROCESSOR CHALLENGE
2020