# SGDSVV RAMANAMURTHY KATAKAM

Software Developer — Application Development

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## SUMMARY

Software Developer with expertise in C++, Python, and the Qt Framework, specializing in application development, image analysis, and embedded systems. Proven track record of creating innovative tools to optimize workflows, automate processes, and enhance efficiency. Passionate about learning new technologies and tackling interdisciplinary challenges.

## WORK EXPERIENCE

**Software Developer Intern**  *Forvia Hella, Lippstadt*
May 2024 – Present

Developed key applications such as a 3D Animator Tool for root cause analysis, a Camera Data Acquisition App for live image processing, and a GOM Conversion Tool for large dataset handling using C++, Python, Qt, and OpenGL.

- Created a custom 3D Animator tool that completely replaced Hyperview, enabling test engineers to verify measurement accuracy and perform root cause analysis in-house, resulting in significant savings by eliminating high licensing costs.

- Implemented multi-threaded architecture for real-time data streaming and processing, optimizing memory usage and reducing latency.

- Enhanced measurement accuracy by implementing live histogram analysis, enabling real-time quality assessment and minimizing the need for additional data collection.

- Designed and delivered intuitive Qt-based GUIs with custom widgets, improving user experience.

- Developed a version control plugin that ensures the worldwide team delivers consistent results for a given input data by maintaining synchronization across all deployments.

- Developed automation scripts in Shell to facilitate seamless interaction between two simulation processes.

- Conducted debugging, testing, and performance optimizations, resulting in significant improvements in system efficiency and workflow automation.

- Collaborated with cross-functional teams to ensure seamless integration and timely delivery of applications.

**Research Assistant (C++ Developer)**  *Bauhaus-Universität Weimar, Germany*
Dec 2022 – Present

Developed mathematical libraries and signal processing applications in C++ for research in numerical algorithms and real-time data processing.

- Developed C++ libraries for solving linear and nonlinear equations and machine learning algorithms (K-Means clustering, SVM).

- Designed Qt-based GUI applications for real-time data visualization and signal processing.

- Integrated advanced signal processing functions into research applications, improving data accuracy.

- Optimized algorithm performance for large-scale computations, improving efficiency and processing speed.

**Research Assistant (Web Developer)**     *eTeach Thüringen, Bauhaus-Universität Weimar*
June 2024 – Present

Worked on virtual meeting integrations and website development using WordPress, Elementor, and MeSe Calendar plugins.

- Integrated tools for virtual meetings within WorkAdventure, enhancing online collaboration.
- Assisted in deploying and maintaining organizational websites, improving internal communication.
- Explored chatbot integration for interactive web solutions, enhancing user engagement.

**Freelance Web Developer**     *Germany*
June 2023 – Nov 2023

Designed, developed, and maintained websites for German clients using HTML, CSS, JavaScript, and WordPress.

- Developed and deployed client websites using WordPress and custom JavaScript solutions.
- Provided hosting, domain setup, and website maintenance services, ensuring smooth user experiences.
- Designed user-friendly UI/UX for various business clients, improving client engagement.

**System Engineer**     *Infosys, India*
June 2021 – Dec 2021

Provided network support and assisted in troubleshooting and maintaining network configurations.

- Gained proficiency in Java OOP, Linux administration, and automation tools like Ansible and Bash scripting.
- Assisted in troubleshooting and maintaining network configurations, enhancing operational reliability.

## EDUCATION

**MSc Digital Engineering (Computer Science)**     Expected Mar 2025
Bauhaus University, Weimar
Key Competencies: MATLAB, Java, SQL, Algorithms and Data Structures.

**Bachelor of Technology (Mechanical Engineering)**     2016 - 2020
JNTUK - UCEV Vizianagaram
Key Competencies: CAD-Software (Fusion 360, CATIA), Thermodynamics, Vehicle Dynamics.

## SKILLS

**Programming Languages** C++
Python,Java, Shell scripting

**Mathematical & Algorithm Development**
Linear & Nonlinear Solvers, Optimization Algorithms

**Frameworks & Tools** Qt, OpenGL,
Multi-threading, Docker, GitHub, Git

**Simulation & Data Visualization**
AnyLogic, 3D Animation Tool, Camera Data Visualization, GIF Creation

**Web Development** HTML, CSS, JavaScript
WordPress, Elementor, MeSe Calendar plugins

**Soft Skills** Problem Solving, Project Management
Team Collaboration, Communication, Adaptability

**Signal Processing & Machine Learning**
Fourier Transforms, FFT, PSD
Wavelet Transforms, K-Means, SVM

**Languages** English (Fluent), German (Conversational - A2)