



# Sai Sri Harsha SURABHI

## Devops Engineer

Passionate developer with experience in Python, Linux, and test automation, with expertise in AWS-Devops.

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### WORK EXPERIENCE

#### Development Engineer

06/2021 - 06/2024 Moewe Optical Solutions Gmbh Mittweida, SN, Germany

- **Embedded Systems Development:** Configured custom Linux environments for embedded systems to enable hardware interaction and communication.
- **GUI Application Development:** Designed unified desktop applications using PyQt5 to consolidate functionalities and automate testing workflows.
- **Image Processing and Data Analysis:** Developed algorithms for laser projection error detection and performance evaluation using advanced image processing techniques.
- **Protocol and Hardware Integration:** Created communication protocols and tested electronic components using microcontrollers and industry-standard tools.
- **Version Control and Deployment:** Collaborated with teams using GIT for version control and streamlined application delivery through containerization.
- **Programming Languages:** Python, C, and C++ for developing software applications.
- **Frameworks and Libraries:** PyQt5 for GUI development and Scikit-Learn for machine learning.
- **Development Environments:** Visual Studio, Visual Studio Code, Ubuntu, and Xilinx Vivado/Vitis for software and hardware development.
- **Image Processing:** OpenCV for image analysis and processing tasks.
- **Networking and Communication:** Internet Protocol Suite (TCP/IP), UDP, Ethernet for data communication and server interactions.
- **Containerization and Automation:** Docker for application containerization, enhancing efficiency.
- **Version Control and Collaboration:** Git for version control and collaboration in Agile, ensuring teamwork.

#### Student Research Assistant (HI-Wi)

04/2020 - 09/2020 Technische Universität Chemnitz Chemnitz, SN, Germany

- **3D Hand Pose Estimation Testing:** Conducted comprehensive testing and evaluation of 3D hand pose estimation algorithms for accuracy and performance.
- **Ground-Truth Mask Creation:** Utilized the VGG annotator to create precise ground-truth masks for hands, enhancing dataset reliability.
- **Pipeline Validation:** Tested the hand pose estimation pipeline with diverse datasets, validating outputs against established ground truth values.
- **Data Optimization Research:** Investigated methods to reduce message data size, contributing to more efficient data transmission.
- **Accuracy Assessment:** Evaluated pixel (2D) and positional (3D) accuracy to ensure the reliability of hand pose estimation techniques.

**Tools:** Visual Studio Code, Ubuntu Linux, Windows, VGG Annotator.

**Skills:** Python3, OpenCV, Keras, PyTorch, Ubuntu, Pandas, Numpy, Matplotlib, Data Visualization, MS Office, Data Analysis.

#### Software Test Engineer

10/2012 - 09/2014 Caagnota Info Pvt. Ltd. Hyderabad, India

**Project:** Electronic Invoice Presentment and Payment (EIPP)

- **Test Case Development:** Created and executed comprehensive test cases for software function blocks, ensuring thorough validation of system functionalities.
- **Functional and System Testing:** Led the execution of Functional Testing, System Integration Testing, and Regression Testing, contributing to overall software quality assurance.
- **Error Analysis and Reporting:** Analyzed and documented error reports for failed test cases, facilitating prompt resolution and continuous improvement.
- **Team Management:** Coordinated team activities and managed project workflows, fostering effective collaboration within Agile frameworks.
- **Agile Methodologies:** Worked within Agile testing methods, adapting to dynamic project requirements and ensuring timely deliverables.

**Tools:** JIRA, Confluence, Slack, MS Office, Eclipse IDE, Visual Studio

**Skills:** Agile | SDLC | STLC | MySQL.

## PROJECTS

### Devops Project

08/2024 - 09/2024 [Datscientest.com](https://www.datscientest.com) Chemnitz, SN, Germany

**Topic:** [Deploying Spring PetClinic Project in AWS Cloud using Microservices](#)

- **Infrastructure Deployment:** Deployed and managed a scalable, high-availability infrastructure on AWS, leveraging services such as EC2, S3, RDS, Route 53, and Lambda.
- **Resource Automation:** Automated the provisioning of cloud resources using Terraform and AWS CloudFormation, significantly reducing deployment times and streamlining setup processes.
- **CI/CD Pipeline Implementation:** Designed and implemented CI/CD pipelines using Jenkins, GitLab CI, and AgroCD to automate the testing, building, and deployment of applications in AWS.
- **Container Management:** Managed containerized applications using Docker and Kubernetes (EKS).
- **Security Enhancements:** Improved application security by implementing IAM roles, configuring security groups, and utilizing AWS Systems Manager for automated security patching.
- **Monitoring and Alerting Solutions:** Developed and maintained comprehensive monitoring and alerting solutions using AWS CloudWatch, Prometheus, and Grafana to ensure system reliability and quick incident response.
- **Cloud Migration and Disaster Recovery:** Led cloud migration projects and implemented effective disaster recovery solutions across multiple AWS regions, significantly reducing downtime and minimizing risks of data loss.
- **Integrated Testing within CI/CD Pipelines:** Built CI/CD pipelines in Jenkins, incorporating unit testing to ensure code quality and reliability.

**Tools:** Amazon Web Services, Jenkins, Gitlab, AgroCD, Docker, Linux, Prometheus, Grafana

**Skills:** Python, Terraform, Bash Scripting, Kubernetes, HELM Charts, MySQL, CI/CD

### Master Thesis

04/2019 - 09/2019 Technische Universität Chemnitz Chemnitz, SN, Germany

**Topic:** [Instance Segmentation for Human Localization](#)

- **Architecture Development:** Designed and implemented a robust instance segmentation architecture specifically aimed at accurately detecting and localizing individuals, even in challenging scenarios where occlusions occur due to other people or objects.
- **Annotation Process:** Utilized the COCO Annotator to meticulously annotate disjoint body regions, enabling precise segmentation of individuals and improving the quality of training data.
- **Advanced Recognition Techniques:** Applied sophisticated recognition methods to enhance the identification of human figures within crowded environments.
- **Algorithm Optimization:** Conducted experiments with various algorithms to achieve optimal accuracy, refining the model's performance through iterative testing and validation.
- **Validation and Testing:** Tested the segmentation algorithm to ensure effective recognition of actual human regions against original masks, validating its efficiency in practical applications and real-world scenarios.

**Tools:** MS Visual Studio Code, VGG Annotator, Inkscape, COCO-Annotator, Ubuntu Linux, Docker, Overleaf, MS Office.

**Skills:** Python3, Convolutional Neural Networks, OpenCV, Numpy, Pandas, Keras, Scikit-Learn, Ubuntu Linux, Virtual Networks, Google Cloud, Docker Container, Tensorflow, Tensorflow Graphs.

### Praktical Trainee Student

04/2018 - 07/2018 Technische universität Chemnitz Chemnitz, SN, Germany

**Software development and testing for automotive ECU**

- Software function development for demo vehicle.
- CAN bus programming with 5 ECUs handling multiple communicating functions and a virtual cockpit.
- Testing the communication between the ECUs.

**Tools:** SystemDesk (dSpace) | Raisonance Ride7 IDE | Virtual Cockpit | C

**Skills.** CAN Networking, ECU Programming, C

### Academic Project

10/2016 - 02/2017 Technische Universität Chemnitz Chemnitz, SN, Germany

**Topic:** Image Processing and Pattern Recognition

- Feature extraction using grayscale values and HOG descriptor.
- The best pixels are applied to test images, resulting in a 90% positive rate.
- Method - II, person recognition with HOG and SVM.
- Best pixel evaluation through the confusion Matrix

**Tools:** Visual Studio, Windows, MS Office

**Skills:** Decision Trees, HOG, Image Processing, SVM, OpenCV, Python, C++

## EDUCATION

### Devops Engineer Diploma

06/2024 - 10/2024 [Datascientest \(Dev University\)](#) France

#### [Devops Engineer](#)

- Built and maintain CI/CD pipelines in Jenkins to reducing manual deployment efforts.
- Managed and automated infrastructure provisioning using Ansible and CloudFormation which support the hybrid environment (on-prem and AWS).
- Implement Docker-based containerization strategies which increase the development productivity.
- Perform application monitoring using ELK stack and create custom dashboards for analyzing server performance and application logs.
- Resolve infrastructure issues, enabling a faster incident resolution process.
- Create and maintain shell scripts for automating various operational tasks.

**Skills:** AWS, Docker, Kubernetes, Terraform, Ansible, Prometheus, Grafana, Datadog, Gitlab

### Integrationskurs Deutsch

11/2020 - 04/2021 [Initiativ Gruppe](#) München, BY, Germany

- Deutsch Sprachkurs B1+Beruf

### Masters in Information and Communication Systems

10/2014 - 09/2019 [TU Chemnitz](#) Chemnitz, SN, Germany

- Digital Systems, Image Processing, Network Communication
- Machine Learning, Deep Learning, Digital Signal Processing

### Masters in Electronics

08/2010 - 06/2012 [Osmania University](#) Hyderabad, TG, India

- Microcontroller Communication, Signal Processing.
- Control Systems, Telecommunication.

## SKILLS

### AWS-Devops

- Designed a reusable Terraform module to deploy VPC, EC2, and S3 resources, reducing infrastructure setup time by 50%.
- Developed a Jenkins pipeline to build, test, and deploy a microservices-based application on Kubernetes, improving deployment speed by 30%.

### Python Development/Testing

- Created a custom GUI application using **PyQt** for controlling industrial cameras and also for motion detection.
- Implemented data capture and image processing features, boosting usability in quality control operations.

## LANGUAGES

### German

> Goethe-Zertifikat B1

### English

> IELTS : 7/9

**Telugu** Mother Tongue

**Hindi** Full Proficiency

## TECHNICAL TOOLS

### TOOLS

- Visual Studio Code
- Visual Studio
- PyCharm
- Wireshark
- GitHub
- Gitlab
- Jira
- Trello
- Confluence
- Arduino
- Putty
- MicrochipStudio
- Docker
- IBM Doors
- H-Term

## PROGRAMMING SKILLS

### Software Programming

- Python
- Matlab
- HTML
- CSS
- C# (Basic Knowledge)
- YAML
- Hashicorp

### Hardware Programming

- C (Basic Level)
- C++ (Basic Level)

## COMPUTER SKILLS

**Databank Systems** MySQL, PostgreSQL

**Network Protocol's** TCP/IP, UDP, Ethernet

**Communication Protocol** CAN, LIN

## CERTIFICATIONS

**Devops Engineer** from Dev University, France - Sep/2024 [link](#)

**Terraform** from DataScientest, Paris - Oct/2024 [link](#)

**Kubernetes for Devops** from Datascientest, Paris - Aug/2024 [link](#)

**Jenkins** from Datascientest, Paris - Sep/2024 [link](#)

**Docker Containers** from Datascientest, Paris - Aug/2024 [link](#)

**SQL Databases** from Datascientest, Paris - Aug/2024 [link](#)

**NoSQL (MongoDB)** from Datascientest - Nov/2024 [link](#)

**Gitlab** from Datascientest, Paris - Nov/2024 [link](#)

**Linux-Administration** from Datascientest, Paris -Jul/2024 [link](#)

**AWS Solution Architect - From Udemy - 2022**

**Deutsch Sprache B1** from Telc - 06/2021 [link](#)

**ISTQB Foundation Level** from UDEMY - 2020 [link](#)

## OTHER SKILLS

### Backend Programming

- Django with RestAPI
- FastAPI

### Manual And Autoimation Testing with Python

- GUI Tesing
- API Testing
- Manual Testing
- Electronic Board level Testing

## OPERATING SYSTEMS

**Windows 10, 11**

**Linux (Ubuntu, Fedora, SUSE, Scientific Linux)**


## INTERESTS


**Hiking/Trekking, Cycling.**

**Learning New Technologies**

**Watching Movies, Meeting friends**

## SOCIAL NETWORKS

 @sshsurabhi

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