

# Murali Hemanna

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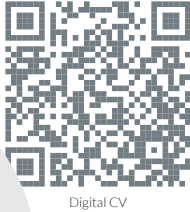
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Digital CV

## SKILLS

### PROGRAMMING

LANGUAGES Python · Java · C++ · Shell-Scripting

FRAMEWORKS PyTorch · SpringBoot · RESTful API

MySQL · MLFlow

TOOLS Git · Docker · QML · Linux · Make

Eclipse · PyCharm · Grafana

MATLAB · Octave · OpenFoam

### SOFTWARE-ENGINEERING

API Design · Debugging · Testing · Documentation

## EDUCATION

### FRIEDRICH-ALEXANDER UNIVERSITY

MASTER - COMPUTATIONAL ENGINEERING

2020 - 2024 | Erlangen

Masters Thesis:

"Reinforcement Learning for learning Mean Average Precision"

Computer Vision · Image Retrieval

Writer Recognition · Reinforcement Learning

### VISVESVARAYA TECHNICAL UNIVERSITY

BACHELOR - MECHANICAL ENGINEERING

2015 - 2019 | Belgavi

Bachelor's Thesis:

"Bio-mimicking Swarm Intelligence of insects in micro-bots"

## LANGUAGES

German B1 ■■■□□□ Working Proficiency

English C1 ■■■■■□ Advanced Proficiency

## HOBBIES

BRAZILIAN JIU-JITSU

Actively practice and compete in the martial art.

Master's in Computational Engineering with focus on image processing and numerical methods. Skilled in software development through research positions at Fraunhofer Institutes and contribution to open source.

Deep Learning · Computer Vision · Research

## EXPERIENCE

### FRAUNHOFER-INSTITUT Angewandte Optik und Feinmechanik

SOFTWARE DEVELOPER | STUDENT RESEARCH ASSISTANT

Mar 2024 - Sep 2024 | Jena, Germany

- Developed QML-based GUI interface for real-time image reconstruction system
- Integrated C++ backend with front-end visualization components

### FRAUNHOFER-INSTITUT Kognitive Systeme

AI FRAMEWORK DEVELOPER | STUDENT RESEARCH ASSISTANT

Oct 2022 - Dec 2023 | München, Germany

- Architected and implemented REST APIs using Spring Boot for AI lifecycle management
- Extended framework functionality through information store extension and health monitoring
- Containerized services for industrial PLC deployment using Docker
- Deployed and tested research prototype framework combining Java and Python components

## PROJECTS

### IDUNION BLOCKCHAIN INFRASTRUCTURE

DEVELOPER - METRICS AND ANALYTICS

- Designed and implemented open-source metrics engine for Hyperledger Indy nodes
- Built real-time monitoring dashboard using Grafana for distributed ledger analysis
- Collaborated with distributed teams following agile methodologies

## COURSEWORK

### DECONSTRUCTING TEXT-TO-IMAGE DIFFUSION

Delivered technical presentation on diffusion models, analyzing the mathematics and architecture behind text-to-image generation from Gaussian noise.

### COMPUTATIONAL FLUID DYNAMICS

Implemented 2D flow solver in Octave, simulating lid-driven cavity flows with focus on finite difference methods.