Murali Hemanna

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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.