

# CURRICULUM VITAE – OMAR ALALI

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## PERSONAL INFORMATION

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## EDUCATION

**B.Sc. Informatik** Friedrich Schiller University Jena: 10/18 - 10/23  
**DSH - Course** Friedrich Schiller University Jena: 04/18 - 09/18

## SKILLS

### Programming languages:

Python, Java, Prolog, Scheme, C/C++, Javascript, SQL, (x64)Assembly.

### Framework, library:

Spring Boot, React, MediaPipe, OpenCV, OpenMP, Nvidia CUDA, NumPy, Pandas, PyTorch.

### Software and Tools:

1. Conda, Pycharm, Jupyter Notebook, DrRacket(Racket/ scheme), CodeBlocks, Visual Studio Code, IntelliJ, MySQL, Postman, Maven.
2. GIMP, X2Go, Git/ GitHub.

**Languages:** German (C1), English (B2), Arabic (Native).

## ACADEMIC PROJECTS

- **Bachelor Thesis: Analyze Facial Symmetry using Estimated Deep Facial Landmarks.**  
*Used the mediapipe framework to extract 3D coordinates of facial landmarks and analyze the symmetry assessment of people with facial paralysis. Landmarks were used to analyze the symmetry of the face in both 3D and 2D spaces.*
- **OpenMP with C++ Image Scanner.**  
*Implemented parallel algorithms to enhance images of text for printing. The algorithms had to use hardware efficiently, thus OpenMP was used to parallelize and vectorize the C++ code.*
- **Experimental Hardware Project.**  
GPU Programming with CUDA, Introduction to VHDL, Programming a RISC Processor using Assembly.  
*Programmed different image filters (Gauss, Sobel Operator, etc.) with CUDA and analyzed the performance with Nvidia Nsight to improve the algorithms. Using a FPGA circuit a RISC processor was programmed using assembly.*
- **Network Programming, Multiplayer Connect Four Java Game.**  
*Developed the game Connect Four with Java using a Client/Server architecture. The game is multiplayer and has a chat function..*

## OWN PROJECTS

- **Full-Stack Developer Portfolio.** [🔗](#)  
*Developed a comprehensive React-based digital portfolio to showcase a broad range of projects, from machine learning to web development.*
- **Numbers Prediction using Artificial Neural Network.**  
*Programmed an artificial neural network that predicts a handwritten number from a 28x28 pixel picture using the MNIST dataset. Only the Numpy library and linear algebraic equations are used to construct the ANN.*
- **Road Lane Line Detection.**  
*Used the Canny edge detection method and Hough transform in Python and openCV to identify a road lane from video input.*