

# BALACHANDRA BHAT

5th Semester student

Bachelor Mechatronics

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## EDUCATION

Bachelor Mechatronics

University of Applied Sciences

Würzburg-Schweinfurt

March 2021 – Present

Mechanical Engineering

(2 Semesters) Visveswaraya

Technological University Belagavi, India

Aug' 2019- Feb' 2021

## COURSEWORK

- Fundamentals of Electronics and Electrical Engineering
- Object Oriented Programming
- Control Systems
- Engineering Mathematics
- Engineering Mechanics
- Mechanical Design and CAD software
- Embedded Systems and Fieldbuses

## INTERESTS

- Robotics Enthusiast
- Computer Vision
- Machine Learning
- Deep Learning

## EXPERIENCE

Wissenschaftliche Hilfskraft

(June 2022 - Current)

Fraunhofer IPA

Working on AI-based assembly assistance system: Intelligent detection of assembly progress and correctness

- It assists in the assembly of the parts and checks the position and the orientation using deep learning. It also features interactive UI using AR.
- Implementation using Raspberry Pi 4 and depth camera (Intel Realsense D435).

## PROJECTS

Smart Car

(March 2022 - Current)

- Functions: object detection, object tracking, obstacle avoidance, interactive web-based UI (Still under development).
- Hardware: **Raspberry Pi 4** as a master (for the higher level tasks) and **Arduino Uno** as a slave (for lower level drive tasks and drive functions), **Raspberry Pi camera v2**, ultrasonic sensor(HC-SR04), MPU6050, Rotary encoders, L298n motor drivers etc.

Smart home

(2019)

IoT integration of existing electrical devices using NodeMCU and ESP32. Controlled with android app (blynk), google assistant and Alexa using IFTTT.

Arecanut sorter

(2018)

- Functions: Separation of ripened arecanut based on colour.
- Hardware: Arduino Uno, colour sensor (TCS3200) and servo motors etc.

## SKILLS

- Operating Systems: **Windows, Linux.**
- Software Tools: **Matlab, VS Code, Microsoft office.**
- Programming Languages: **C/C++, Python.**
- Frameworks/Libraries: **Anaconda, OpenCV, PyTorch, Keras, Tensorflow 2.**
- Others: **Git, GitHub, Docker, Object Detection/Classification, 6D Pose estimation.**