



BHARATH BANGALORE SOMASHEKAR

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● SOFTWARE DESIGN AND DEVELOPMENT SKILLS

General

- Software architecture designing and development.
- Languages: High proficiency in C, C++, python, and intermediate proficiency in Java.
- Middleware and application development in Linux and Windows environments.
- Extensive work on Unix based systems and embedded systems
- Unit Testing: GTest, GMock, etc
- GitHub: <https://github.com/Bharath-S>

Tools and Technologies

- Visual Studio, Eclipse, QT creator, Vi & Vim, Git, gdb.
- Protocols: TCP/IP, CAN, and more
- Platform: Windows and Linux and QNX. FPGAs, SoCs, Arm CPUs, PPCs.
- Raspberry Pi, Arduino, and similar microcontrollers
- Tachographs, Smartcard, Diagnosis, CAN, BLE, GSM, and Wi-Fi middleware application development.

Artificial Intelligence

- LSTMs, CNNs, GANs, Decision Trees, Logistic regression
- Object Detection, Engagement tracking, Generative modeling, 3D data, Semantic segmentation
- Pytorch, Tensorflow, Pandas, NumPy, scikit-learn

● WORK EXPERIENCE

20/01/2021 – CURRENT – Stuttgart, Germany

MASTER THESIS STUDENT – INSTITUT FÜR SIGNALVERARBEITUNG UND SYSTEMTHEORIE, UNI STUTTGART

GANs for LiDAR point cloud denoising and synthetic-to-real translation

- Development of Deep learning networks to denoise the Lidar point clouds obtained from severe weather driving conditions, as well as domain adaptation from synthetic lidar data to real lidar data.
- Generative Adversarial Networks (GANs) used predominantly
- Semantic segmentation, Blindspot denoising, self-supervised networks
- Python, PyTorch programming on Linux environment

15/02/2019 – 14/07/2020 – Stuttgart, Germany

WERKSTUDENT – ROBERT BOSCH GMBH

- Java application architecture design and development
- Automotive Network Protocols: CAN, Ethernet, LIN, Flexray
- Developed a Graphical User Interface on windows.

21/08/2017 – 31/08/2018

SOFTWARE DEVELOPER 2 – INFINERA INDIA PRIVATE LIMITED

- Architecture design and development and maintenance of software and platform user-land drivers using C, C++ on Linux environment
- Architecture designing of the software infrastructure for optical amplifiers and multiplexers.
- Optical chassis controller card software enhancement and maintenance.

24/07/2014 – 11/08/2017

SENIOR SOFTWARE ENGINEER – ROBERT BOSCH ENGINEERING AND BUSINESS SOLUTIONS

- Development of multimedia and black-box software for cars and trucks, major work in Telematics to provide connectivity units for European commercial vehicles.
- Responsible for the middleware development of Tachograph reader, Smartcard, CAN, and vehicle diagnosis in the European commercial vehicles.
- C, C++, shell scripting, QT creator Linux, Windows environment

01/02/2021 – CURRENT – Stuttgart, Germany

WERKSTUDENT – FRAUNHOFER-INSTITUT FÜR ARBEITSWIRTSCHAFT UND ORGANISATION

- Software Architecture Design and development
- Internet of things application development
- Web applications using python and raspberry pi on Linux environment
- HTML, JSON, MongoDB, Javascript

● **ACADEMIC-INTERNSHIPS/ FACHPRAKTIKUM**

01/10/2020 – 12/03/2021

Conversational AI

Engagement Tracking using Deep Neural Networks: Predict the engagement level of a person in a conversation using head pose, gaze, and facial action units of the person

- Python, Tensorflow
- Github: <https://bit.ly/3f1DqDO>

20/10/2019 – 29/02/2020

Interaktive Systeme: Machine Learning for HCI

Spatiotemporal visual saliency prediction on GUI: A machine learning and a deep learning approach to predict where the user would focus his attention on the GUI using his mouse, keyboard activities without the need of an eye tracker

- LSTM, Logistic Regression, Python, Tensorflow
- GitHub: <https://bit.ly/3nSBtxi>

● **EDUCATION AND TRAINING**

01/10/2018 – CURRENT – Stuttgart, Germany

MASTER OF SCIENCE IN INFOTECH – University of Stuttgart

- Embedded Systems, Internet of things, Service-oriented programming, Advanced software design, and testing
- Data-mining and Olap, Deep learning, Machine Learning, Data science
- Python, C++, Java, C, Linux

07/2010 – 06/2014 – Bengaluru, India

BACHELOR'S IN ELECTRONICS AND COMMUNICATIONS – BMS College of Engineering (BMSCE)

- C, C++, Micro-controllers, Embedded Systems Design, Real-time Systems, Automotive Embedded System.
- Worked on Arm Cortex M3 processors, Arduino, and LPCs, MatLab
- Graduated with CGPA 9.01 (First class with Distinction).

● PROJECTS

Recent Projects

1. **Smart meeting room displays:** Internet of things (IoT) based control and update of meeting room displays connected to raspberry pi clients.
2. **Smart study room:** Artificial Intelligence Planning based IoT project that can track the people count in the room and automate the control of lighting, window blinds, heating, cooling, and the dustbin status
3. **Network Simulator:** Worked on a communication network simulator based on java
4. **Telematics Solution in Trucks:** This project is undertaken at ROBERT BOSCH India for one of the big automobile OEMs in Europe. I have developed the middleware for Smart Card and Tachograph reader. I've worked on the application development for CAN and Diagnosis.

● HONOURS AND AWARDS

Hackathon awards

- **Unity Hackathon:** 3rd prize. Conducted by Fachgruppe Informatik der Uni Stuttgart
- **IVS Hackathon:** Best idea award. Conducted by Informatik Verbund Stuttgart der Uni Stuttgart
- **ARM Symposium 2014 India:** 2nd runner up prize for providing a solution for a vehicle to vehicle communication on indoor navigation robots