BHARATH BANGALORE SOMASHEKAR

(+49) 15168566165 | Bharath.somashekar29@gmail.com |

https://github.com/Bharath-S/ |

https://www.linkedin.com/in/bharath-b-somashekar-863a7012b/ |

Zi. 10604, Allmandring 24B, 70569, Stuttgart, Germany

SOFTWARE ARCHITECTURE 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

Tools and Technologies

- Visual Studio, Eclipse, CANalyzer-Vector, QT creator, Vi & Vim, Git, gdb.
- Protocols: TCP/IP, HTTP, CAN
- 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 SKILLS

General

- Long short-term memory (LSTM),
- Convolutional neural network (CNN)
- Generative adversarial networks (GANs)
- Logistic regression, AI Planning
- Decision Trees

Tools and Technologies

- Python programming,
- scikit-learn, pandas, NumPy, Pytorch, Tensorflow

WORK EXPERIENCE

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

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 models
- Python, PyTorch, and C++ programming on Linux environment

01/10/2020 – 12/03/2021 – Stuttgart, Germany
FACH-PRAKTIKUM: CONVERSATIONAL AI – INSTITUTE FOR NATURAL LANGUAGE PROCESSING, UNI STUTTGART

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
- Private video dataset used. Openface is used for the feature extraction
- Python, TensorFlow programming on Linux environment

Github: https://github.com/Bharath-S/Engagement-Tracking-using-Deep-neural-networks

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.

20/10/2019 – 29/02/2020 – Stuttgart
FACH-PRAKTIKUM INTERAKTIVE SYSTEME: MACHINE LEARNING AND COMPUTER VISION FOR HCI – INSTITUT FÜR VISUALISIERUNG UND INTERAKTIVE SYSTEME - UNIVERSITY OF STUTTGART

Spatio -temporal 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 a eye tracker
- LSTM, Regression, Python, Tensorflow

Github: https://github.com/Bharath-S/Spatio-Temporal-Attention-Prediction-for-GUI

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

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

http://bmsce.in/

PROJECTS

Professional Projects

Smart meeting room displays: Internet of things (IoT) based control and update of meeting room displays connected to raspberry pi clients.

Network Simulator: Worked on a communication network simulator based on java

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.

Optical Network Equipment. Develop FCAPS (fault, configuration, accounting, performance, security) applications and lower middleware for network elements at INFINERA PVT Ltd.

Music Player Application. An HMI application was created using QT creator to be run on an embedded target. This application can play music, maintain playlists and favorites, and also shuffle the playlist.

Drone Camera with Oculus rift. A camera is mounted on a drone and the view from the drone can be viewed in Oculus rift connected wirelessly. The motion of the camera is also wirelessly controlled by the motion of the oculus rift using the 9 axis inertial sensors.

Academic Projects

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

Autonomous Navigation Robot. A bot built to navigate on a grid environment with no remote intervention, it detects and avoids any obstacles on the path and safely navigates from one point to another (source to destination)

Multi-bot Communication. A swarm of robots, which can interact wireless, are made to navigate on the grid structure without colliding with each other. Robots co-ordinate with each other to form patterns such as triangle formation, square formation, serial formation, and random formations.

HONOURS AND AWARDS

Honours and awards

Unity Hackathon: 3rd prize on building an augmented reality based gaming solution in a span of 2 days. Conducted by Fachgruppe Informatik der Uni Stuttgart

IVS Hackathon: Best idea award for providing a indoor navigation solution using the sensors provided by Naise. Conducted by Informatik Verbund Stuttgart der Uni Stuttgart

Arm Symposium 2014 India : 2nd runner up prize for providing a solution for vehicle to vehicle communication on indoor navigation robots

RECOMMENDATIONS

- GitHub page: https://github.com/Bharath-S/
- YouTube Channel;: [Videos on hobby projects](#)
- [LinkedIn](#)