Curriculum Vitae

M A HAFIZ
Address: Budapester Str. 20, Erlangen, 91056, Germany
Mobile: +4917679027686
Email: mahafizsourav@gmail.com
LinkedIn: www.linkedin.com/in/hafiz-ma
GitHub: https://github.com/MAHAFIZS

Research Experience

HIWI Job- FAPS (Institute for Factory Automation and Production Systems) **at FAU Erlangen-Nurnberg**

Area-Social Robotics (Funded by Bavarian Research Foundation)
Duration- May 2024- Present

Responsibilities

1. Designed and developed a web app for social robotics, integrating frontend and backend functionalities to assist researchers.
2. Conceptualized and prototyped an acceptance model to evaluate human-robot interaction.
3. Collaborated with interdisciplinary teams to optimize system designs
4. Familiar with ISO 13849 and IEC 61508 safety standards for engineering standard for Automation and Robotics.

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Research Student Assistant- Assistive Intelligence Robotics Lab
Department of Artificial Intelligence in Biomedical Engineering,
FAU Erlangen Nurnberg.
Duration- April 2024- Present

Responsibilities

1. Using Hand gestures to control Franka Robotic Hand. (C#)
2. Testing intuitive control algorithm.
3. Evaluation of test accuracy and report on this project.

Academic Experience

Engaged in robotics during 2014-2018 during B.Sc. in Electrical & Electronic Engineering in CUET
Making Line follower robots, Fighting robots, Racing Robot for competitions.

1. Developing stable structure for robots (Mechanical Structure)
2. Designing the structure using AutoCAD.
3. Designing Electrical Circuit, PCB design.
4. Image Processing for Automatic Car (Checking any obstacle and finding path) and using machine learning to learn.

Professional Experience

Lecturer, 04/2021 – 04/2022
Premier University - Chattogram, Bangladesh.

Responsibilities

1. Conducting different theory courses i.e.: Signals and Systems, Electronics, Digital Logic Design etc.
2. Conducting different lab sessional i.e.: MATLAB, Python Microprocessor & Microcontroller.

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Engineer, 04/2019 – 03/2021
Abul Khair Steel & Power Ltd - Chattogram, Bangladesh.
Responsibilities

1.Developing sensors and checking abnormalities for Rolls Royce Gas Engine.
2. Schedule maintenance of Rolls Royce Gas Engine
3. Everyday report of Calculation of Power Plant to the Managing Director of Company.

Education and Training

Friedrich-Alexander-Universität Erlangen Nurnberg *Erlangen, Germany.* **M.Sc. in Medizintechnik (Medical Image and Data Processing (Cont.) Course Completed: 85 ECTS**

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Chittagong University of Engineering & Technology, *Chattogram, Bangladesh*
Year of Passing: 12/2018
Bachelor of Science Electrical & Electronic Engineering
German Grade- 1.9
Thesis Grade-1.0

Internship

Completed successfully in 2023 EXCITE Zurich Summer School on Biomedical Imaging from September 4, 2023, to September 15, 2023.
ETH Zurich, *Switzerland*.

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Industrial Technology in Electrical Engineering and Instrumentation
Duration-25/02/2017-16/03/2017
TICI- Narshingdi, Bangladesh

Projects

- **Colorful object sorting by robotic hand using ROS.**
- **Automatic Car using Image Processing and Machine Learning**
- **Mine Sweeping Robot (Raspberry Pi)**
- **Fighting Robot for Robo-fight competition. (Python)**
- **Car speed measurement device. (Microcontroller)**
- **Arduino based Automatic plant irrigation system. (Arduino).**
- EMG Signal Analysis and find out healthy person. (MATLAB).
- Implementation of classifiers KNN, Linear Logistic Regression, Kernel SVM, GMM (Python).
- Implementation of optimization schemes of Stochastic Gradient Descent (SGD). (Python, PyCharm)

- Implementation of Convolutional Neural Network. (CNN) step by step. (Python, PyCharm)
- Banking distress prediction via machine learning (MATLAB)
- Design and analysis of n-bit comparator in Cadence virtuoso (VHDL)

Skills

- Programming Languages: C,C++, C#, Python, MATLAB, VHDL, SQL
- PCB Design- Proteus, ISIS
- Software- PyCharm, ROS, Simulink, MATLAB, Cadence, AutoCAD
- Microcontroller- PIC, Arduino, Raspberry Pi, ESP32
- Debugging- Logic Analyzer, Oscilloscope
- Operating System- Windows, Linux
- Source and Version Control: Git, GitHub

Publications

1. Hafiz, M.A., Hashem, A.M., Khan, A.A.S., Rashid, M.H. and Faruqui,
M.A.K. (2021) 'Implementation of non-contact bed embedded ballistocardiogram signal measurement and valvular disease detection from this BCG signal', Int. J.Medical Engineering and Informatics, Vol. 13, No. 4, pp.289–296.

2.Diagnosis of Malignant Melanoma using Color and Textural Features from Dermoscopic Images. Shahrin Akter, Joynob Binte Ahmed, M. A. Hafiz, Nusrat Jahan. International Conference on Big Data, IoT and Machine Learning (BIM 2021), September 23-25, 2021

Language

Bengali-First Language
English-Advanced
German-A2