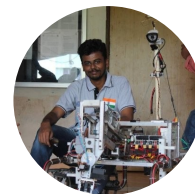


BALAVIVEK SIVANANTHAM

Master Student at Bielefeld University

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WORK EXPERIENCE

Work Student

Arvato Systems

June 2018 – Ongoing Gütersloh, Germany

Built Portal for Pepper robot. Which includes

- Object recognition and Shopping Assistant with suggestions based on tags like Business, casual, sports. (Model trained for Recognition costumes and Gender with the Tensor flow and custom vision AI). The model worked with 96% accuracy.
- Created Chat bot, the robot interacts with a human using a pre-defined set of topics.
- Implemented Robot Navigation for a Data center tour and to explain customers various sites in datacenter.
- Trained a model for Recognition of Printed text and handwritten text and Translation(using Deepl Translator API).

Currently Working on developing a Content Management System for robots, with Flutter.

Machine Learning Engineer

FARO Technologies

March 2018 – June 2018 Stuttgart Area, Germany

Built Android Application for object recognition and Object measurement.

- I got to work with Theta S camera (360 degree) Linked that to Android application.
- Trained Tensor flow model for Object recognition.
- Created Image processing Algorithm in openCV to generate edges of an object to find the measurement of the object.

Programmer Analyst

Cognizant Technology Solutions

June 2016 – July 2017 Chennai, India

- I was part of Tier-1 AD(Application Development) Team for MetLife AVM.
- Under our team we are maintaining more than 15 web application(Client Server Software). I have been assigned with 3 applications. I have to take care of the code changes, Database changes and support in the application.
- Code change mainly include Changes involving Core Java, Struts, Spring and SQL.
- My Main role was to do code changes in the 3 existing web application as per TDD(Technical Design Document).

SKILLS AND INTEREST

Machine Learning Data Analysis Java, Python
Android & Web Applications Product Management
Robotics Amazon AWS Deep Neural Networks
C /c ++ opensim-rl Bullet3 Tensor flow, pytorch, pandas
Flutter Deep Neural Networks Git and Github

EDUCATION

M.S. in Intelligent Systems

Bielefeld University

Sept 2017 – Ongoing Bielefeld, Germany

- Machine Learning.
- Deep Learning.

B.tech. in Electronics & Instrumentation Engineering

SRM University

Apr 2012 – Jun 2016 Chennai , India

- Automation Engineering.
- Control system.
- Electronic circuits and Digital System.

PROJECTS

Deep Mimic

CITEC- Bielefeld University

January 2019 – Ongoing Bielefeld, Germany

- Working on the deep Mimic code released by Open AI.

Lexicon Free Automatic Speech Recognition

CITEC- Bielefeld University

February 2019 – Ongoing Bielefeld, Germany

- Working on the Google Speech Commands dataset to test RNN attention model. To train a neural network which can recognize commands without a set of predefined lexicon.

Deep Learning

CITEC- Bielefeld University

January 2019 – March 2019 Bielefeld, Germany

- This Project involved working on GAN's and Adversarial attack of Image dataset. To perform Image classification and idea was to manufacture adversarial examples in order to fool the network into making wrong predictions.
- In this project there was a another sub project which involved training a recursive and recurrent neural network. In Recursive neural network which was trained to estimate free energy of an RNA, Net has to infer the correct energy from a given tree.

LANGUAGES

English
Tamil
German



MOST PROUD OF



Ranked 9th worldwide and 1st in India

as Team Leader for Team RUDRA (SRM Mars Rover Team) for URC (University Rover Challenge) -2016 Organized by MARS Society at MDRS, UTAH, USA



Ranked 12th worldwide and 1st in India

as Electronic Design Engineer for Team RUDRA (SRM Mars Rover Team) for URC (University Rover Challenge) -2015 Organized by MARS Society at MDRS, UTAH, USA



The Innovator award

Pitched in Startup idea in "the bazaar"- A marketing and innovation expo'14 Conducted by Faculty of management SRM University

PUBLICATIONS

Journal Articles

- Balavivek, S and Et al. (2015). "A Low cost Automated fire rescue system for Locomotives". In: *International Journal of Applied Engineering Research* 10 (14), pp. 34497–34500.
- Balavivek, S and Kapil D (2015). "Design of a Mars rover with three pivot point mechanism". In: *International Journal of Advanced Technology in Engineering and Science* 03 (11), pp. 210–219.

PROJECTS

Next Generation Porter

SRM University

 January 2016 – June 2016  Chennai, India

- As a part of Bachelor Thesis a robot prototype was made, The main objective of the robot is to follow human autonomously in any terrain and carry luggage. It was made to help people in carrying their luggage.

Weather Monitoring and Data Acquisition

SRM University

 May 2013 – July 2013  Chennai, India

- Outdoor Weather Monitoring (Wind speed, Wind Direction, Temperature, Moisture, Precipitation, Pressure) these are collected and Transmitted wirelessly to the ground station using Xbee.
- The collected data are uploaded to a cloud (Amazon AWS) to get real-time data over the internet, for Time Series Prediction.

PROJECTS

Learning to Run - Reinforcement learning environments with musculoskeletal models

CITEC- Bielefeld University

 April 2018 – Dec 2018  Bielefeld, Germany

- In this a learning controller to enable a human model to navigate a complex obstacle course quickly. In the OpenSim environment where we can synthesize a physically accurate motion.
- Worked on training the agent using Variational autoencoder and Word2Vector. To reduce the number of parameters the agent has to be trained, it was an effort to reduce the time of training.

Using Spiking Neural Networks as a Sudoku Solver

CITEC- Bielefeld University

 April 2018 – Dec 2018  Bielefeld, Germany

- The project supervised by Christoph Ostrau and Dr. Michael Thies, The goal was to integrate an SNN solver into a GUI and to create an easy to use platform to run and test different configurations and to visualize the SNN's output.
- Worked on Spike time evaluation and neural network weight tuning.

Mars Rover Design - University Rover challenge

RUDRA, SRM University

 April 2014 – Sep 2016  Chennai, India

- Led the team for a competition Organized by MARS Society at Utah, USA and backed 9th in worldwide and 1st in India.
- Involved in Complete electronics of the rover and Rover locomotion and arm manipulation coding.

RoboCup @Home (Team Of Bielefeld-Tobi)

CITEC-Bielefeld University

 Sep 2017 – April 2018  Bielefeld, Germany

- The RoboCup activities are embedded in human-robot interaction with laypersons in regular home environments.
- The goal is to provide a robot with capabilities that enable interactive skills and tasks through natural communication in unknown environments.
- I build an algorithm which optimizes grasp of the object. Which involved object recognition and finding out optimally strategy for grasp.

Social Embodiment with NAO

CITEC-Bielefeld University

 June 2018 – March 2019  Bielefeld, Germany

- An independent module for NAO to recognize its surrounding environment and to interact with humans (Chat and Game). NAO will be able to localize itself and be able to point, speak, recognize human speech, do gestures while interacting with the human; finally, a multi-modal interruption feature for NAO is also implemented.
- Project majorly involves in finding out How human feel socially connected to the robot, In doing a daily task.