Pavithran Pandiyan

Date of birth: 05/12/1994 | **Nationality:** Indian | **Gender** Male | (+49) 15171684014 |

94.pavithran@gmail.com | https://www.linkedin.com/in/pavithran-pandiyan/ |

Zimmer 506, 48B Pfaffenwaldring, 70569, Stuttgart, Germany

WORK EXPERIENCE

01/10/2020 – CURRENT – Stuttgart
STUDENT ASSISTANT – PERCEPTUAL UI

- Worked on controlled facial feature mixing approaches, using styleGAN.
- experience with various GAN loss functions.
- implemented a custom network over styleGAN for face blending with masks.

30/11/2020 – CURRENT – Stuttgart, Germany
MASTER THESIS STUDENT – INSTITUT FÜR SIGNALVERARBEITUNG UND SYSTEMTHEORIE

Topic - "Multimodal Data enhancement for adversarial learning"

- Thesis explores sensor fusion approaches for domain adaptation, mainly for object detection task.
- Explored and evaluated Unsupervised Domain Adaptation methods for object detection.
- Implemented various sensor fusion approaches for improving object detection.

01/03/2020 – 31/08/2020 – Darmstadt
COMPUTER VISION INTERN – AGT INTERNATIONAL

- Part of the group that developed the IOS app "Perfect Play" for Chelsea FC, contributed in the development of Ball and Pose detection models.
- Evaluated and analyzed grid cells and scaling effects in YOLO based detection models.
- IOS App feature development to upload recorded video data to a local server using Samba client.
- End to end pipeline to create annotatable video snippets from raw video data using Python and ffmpeg.
- Integrated MLFlow server to existing object detection API, which enables loading and inference using custom DNN models .
- Python OpenCV program to merge multiple video snippets with intermediate information frames.
- Prototyped Docker application using Python & Flask to maintain a database of completed Inference jobs.

Darmstadt, Germany

15/01/2019 – 31/12/2019
STUDENT RESEARCH ASSISTANT – FRAUNHOFER IPA

- Augmented Reality application development on Hololens, for visualization of sick laser scanner in AR space, to guide Humans in Robot Environments.
  - Integrating Robotic Operating System (ROS) with Hololens UWP Application.
  - Experience developing applications in Unity3D.
  - Prototyped the concept using ARCore in Android Application.
- Active Learning for Labeling defects in manufacturing raw materials.
  - Developed an active learning pipeline to continuously train the model to assist human annotators.
  - Built and trained TensorFlow JS models to Visual Object Tracking Tool.
  - Experience developing React + Redux based Applications.
  - Surveyed literature of various DNN models for Object Tracking for active learning.

Stuttgart, Germany

27/06/2016 – 03/09/2018
SENIOR ENGINEER – NOKIA

Nokia R&D Site - Fixed Networks Broadband Access
Worked in various software releases and developed features for FTTU 7342 and ISAM 7360 (NOKIA's line of GPON Broadband Access Network Multiplexers).
Strong C/C++ programming skills.
End to end understanding of the Broadband Access System

Developed Linux shell and python scripts, to speed and automate day to day activities.
Experience Maintaining local Sanity systems, controlled and analyzed smoke tests with Jenkins.
Good experience using version control software like GIT, Mercurial and Clearcase.
Maintained Code browsing server with Opengrok.

Chennai, India

01/08/2013 – 01/04/2016
STUDENT ENGINEER – SRM HUMANOID TEAM

•Programmed the Humanoid robot using embedded Linux boards like Raspberry Pi, ODROID , CHIP.
•Experience working in ROS - Robot Operating system, for controlling Robotis Dynamixel MX & AX high torque high precision motors in the humanoid robots made from scratch at the center.
•Good understanding of the inverse kinematics algorithms involved in Robot motions like bipedal walking, kicking, painting.
•Robot simulations in 3D environment using Gazebo and MoveIt! motion planner
•Won Bronze medal in freestyle event at Robogames 15, San Mateo, California.

Kancheepuram, India

EDUCATION AND TRAINING

01/10/2018 – CURRENT – Stuttgart, Germany
MASTERS IN INFORMATION TECHNOLOGY – University of Stuttgart

Detection & Pattern Recognition
Deep Learning
Smart Cities and Internet of Things
Imaging Science
3D Printers and Scanners
Robust System Design
Basic Subjects: Operating Systems, Computer Architecture and Organization, Advanced Mathematics

01/08/2012 – 01/05/2016 – Kancheepuram, India
BACHELOR OF TECHNOLOGY - ELECTRONICS AND COMMUNICATION ENGINEERING – SRM University

Electronics : Linear Integrated Circuits, Embedded Systems, VLSI , Digital Circuits, Electronic Devices, Microprocessors and Microcontrollers.
Communication Theory : Digital communication, Information Theory, Microwave Communication , Antenna and Wave guide propagation, Wireless communication, Computer networks

LANGUAGE SKILLS

Mother tongue(s): TAMIL

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
GERMAN	A1	A2	A1	A1	A1
ENGLISH	C2	C1	C1	C1	B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

DIGITAL SKILLS

C | C++ | Python | MATLAB | Unity3D | Git | Linux Operating System | Android Programming | FlutterDart | Internet Protocols and Network Layers

JOB-RELATED SKILLS

Job-related skills

- Good math aptitude and problem solving skills.
- Experience working in machine learning following frameworks: TensorFlow, Keras and Pytorch.
- Design Patterns and Object Oriented Programming skills

PROJECTS

Explainable Diabetic Retinopathy using CNN

https://github.com/pavithranp/DiabeticRetinopathyDetection

- Convolutional Neural Network that diagnoses Diabetic Retinopathy using Retinal scans of patients.
- Grad-CAM snippet that plots the activation maps of features that indicate the disease.
- Data augmentation to make the model more robust and accurate

Human Activity Recognition using IMU sensors

https://github.com/pavithranp/HumanActivityRecognition

- Designed an LSTM network that predicts Human Activity based on multiple inertial sensors placed in 6 joints in the body.
- Created a prototype application to Android phone that would predict movement based on the IMU data.
- Evaluated the performance of the method by checking predictions on different positions of the sensors.