Bharath Somashekar

https://github.com/Bharath-S

Website : https://bharath-s.github.io/

Email: bharath.somashekar29@gmail.com

Education

- **University of Stuttgart** — Stuttgart, Germany
  Master of Science in Information Technology; GPA: 1.8 — *Oct. 2018 – June. 2021*
- **B.M.S College of Engineering** — Bangalore, India
  Bachelor of Engineering in Electrical and Electronics; GPA: 1.5 (9.1/10.0) — *Aug. 2010 – July. 2014*

Research

- **Master Thesis - Grade: 1.0** — Stuttgart, Germany
  Deep learning Engineer — *Jan 2021 - July 2021*
  - **Topic**: GANs for LiDAR point cloud denoising and synthetic-to-real translation
  - **Work**: Development of Unsupervised Deep learning networks to denoise and reconstruct the 3D Lidar point clouds obtained from severe weather driving conditions.
  - **Networks**: CycleGAN, Pix2Pix, UNets, CNNs based denoising, VAEs and GANs based translation and a novel approach called the MaskGAN which uses mask priors to detect outlier and reconstruct the LiDAR data
  - **Tools and Technologies**: Python, PyTorch, GANs, CNNs, NumPy, mayavi, ROS, anaconda, Linux

Projects

- **Spatio-temporal visual saliency prediction on GUI**: A machine/deep learning based 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.
- **Engagement Tracking**: Deep Neural Network application that can predict the dynamic engagement level of a person in a conversation using head pose, gaze, and facial action units of the person.
- **DNN Speech recognizer**: A Deep learning based speech to text model using LSTM, BiLSTM, CNN.
- **Part of Speech tagging**: Classifying the words in a sentence to noun, verb or adjective using Hidden Markov Models

Experience

- **Mecedes Benz Innovation Lab** — Berlin, Germany
  Senior Software Engineer — *Oct 2021 - Present*
  - **AI Voice assistant**: Implement and handle the dialog management for the Mercedes Benz voice assistant
  - **NLU handling**: Classification of the recognized intents using tree based methods such as random forest
  - **Dev Environment**: Docker, Python, C++, scikit-learn, gitlab, yocto, jenkins, Linux
- **Infinera** — Bangalore, India
  Software Developer 2 — *Aug 2017 - Aug 2018*
  - **FCAPS**: Development of Fault, Configuration, Accounting, Performance, Security for optical amplifiers.
- **Robert Bosch** — Bangalore, India
  Senior Software Engineer — *July 2014 - Aug 2017*
  - **Connectivity Software**: Design and development of a C++ application to achieve the interoperability of the telematics device in trucks

Skills

- **Languages and Frameworks**: Python, C++, Pytorch, Tensorflow, Keras. Docker
- **Know-How**: Machine learning, Deep learning, GANs, CNNs, Transformers(Hugging-face)
- **Technologies**: OpenCV, OpenFace, NumPy, Panda, scikit-learn, NLTK.

Cerifications and Hackathons

- **NLP expert**: Natural Language Processing expert nanodegree from Udacity
- **Unity Hackathon 2019**: Augmented reality based game - 3rd prize
- **IVS Hackathon 2019**: Augmented reality based guide application with indoor localization - Best idea award
- **ARM Symposium 2014**: Autonomous navigation robot - 2nd runner up prize

Publication

- **GLPU**: A Geometric Approach For Lidar Pointcloud Upsampling - https://arxiv.org/pdf/2202.03901.pdf