Krishna Kinger

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Research Interests

Machine Learning, Computer Vision, Visual Analytics

Work Experience

09/2020 – Present **DFKI, Germany [Research Assistant]**
[Python, C++, ROS]
- Development of an API for scene flow prediction using multi-modal fusion based CNN.
- Tool development for fusion of point clouds from LIDAR and stereo sensor.
- Analysis of different techniques for estimation of LIDAR-stereo calibration.
- Developed an API for accessing real-time point cloud stream from LIDAR and image stream from stereo camera.

04/2019 – 09/2020 **Fraunhofer ITWM, Germany [Research Assistant]**
[Python, C++, QT, PyTorch, CGAL]
- Image processing, viewpoint candidate generation for the effective surface inspection of 3D object.
- Development of PyQt based application for data pre-processing pipeline allowing user to inspect the 3D object.
- Worked on POC: Using geometric deep learning networks for generating the viewpoint candidates.

07/2016 – 08/2018 **Oracle, India [Software Engineer II]**
[Microsoft .Net, C#, C++, SQL Server]
- Functional designing and Implementation of GDPR compliance features for the POS client and server system.
- Technology up-gradation of the legacy software to the latest technologies for security and performance.
- Feature enhancements and security fixes for the product.
- Built a standalone utility to generate the status report in the build deployment server for easy maintenance of summaries.

01/2016 – 06/2016 **Oracle, India [Engineering Intern]**
[Microsoft .Net, WPF, Windows Services]
- Developed a WPF based application for performance benchmarking of cloud-based POS system.

06/2015 – 07/2015 **Schneider Electric, India [Summer Intern]**
[Matlab, Java, Android]
- POC application development for Wi-Fi-based indoor positioning system.
- Prototype development in Matlab to display the indoor location based on the coordinates input.
- Development of an android application estimating indoor location using relative signal strength index.

Education

10/2018 – Present **M.Sc. Computer Science [Specialization: Intelligent Systems]** CGPA: 1.7
TU Kaiserslautern, Germany [ECTS Grading Scale]

07/2012 – 07/2016 **B. Tech Computer Science** CGPA: 7.95/10
Manipal Institute of Technology, India [ECTS Grade: 2.1]

Projects

07/2020 – 08/2020 **Covid-19 dashboard for estimation of reproducibility factor**

- Developed a DASH based visual analytic tool to analyze Covid-19 statistics for multiple countries.

04/2020 – 07/2020 **IEEE VAST Challenge 2020**

- Developed a dashboard for visualization and analysis of a multi-channel Spatio-temporal network.
- Property graph modeling using Neo4j and exploratory visual analytic tool implementation using DASH.

11/2019 – 03/2020 **Stereo Online-Autocalibration on Mobile Hardware**

- Analysis of autocalibration techniques for stereo setup.
- Implementation using image feature extraction and sparse bundle adjustment.

11/2019 – 02/2020 **IEEE VAST Challenge 2019**

- Created a visual analytic tool for visualizing the sensor information on provided spatial mapping.
- Implementation of web-based visualization using Bokeh server and Python.

01/2019 – 04/2019 **Processing of LiDAR data for autonomous system**

- LIDAR point cloud acquisition and filtering of non-interest points for reduction in processing time for autonomous driving.

11/2012 – 08/2015 **Parikshit Student Satellite**

- Member of on-board computers subsystem and system engineer for the team working in the development of a nano-satellite under the guidance of the Indian Space Research Organisation (ISRO).
- Development of a beacon decoder software for translation of housekeeping signals received from the satellite.
- MATLAB tool development for data acquisition and logging to monitor real time status of RTOS scheduler.
- HIL setup for verification of attitude determination control systems.

02/2015 – 06/2015 **Smart Traffic Management [Texas Instrument Innovation Challenge]**

- Development of a solar-powered modular traffic controller with cameras for detecting traffic at a junction.
- Efficient switching of traffic signals to harmonize the traffic flow.

08/2014 – 09/2014 **Healthcare based Android Application [IEEE India SAC]**

- Application for doctor-patient interactions and digital records.

Technical Skills

Programming Languages	Python**,** C++, C#, Matlab
Frameworks/Libraries	PyTorch, TensorFlow, Pandas, Scikit learn, OpenCV
Visualization Tools	Plotly, Dash, Bokeh, Tableau, Neo4J
Database	SQL, Neo4J

Publications

- "Using xPC TARGET to test the Control System of a Nano Satellite" - IEEE Aerospace Conference, Aeroconf 2016, Montana, USA
- "Adaptive fault tolerant architecture for enhanced reliability of small satellites" - IEEE Aerospace Conference, Aeroconf 2016, Montana, USA
- "Performance Analysis of Micrium RTOS in the computer of a Nano-satellite" - IEEE Aerospace Conference, Aeroconf 2015, Montana, USA
- "Design of a CubeSat Computer Architecture using COTS Hardware for Terrestrial Thermal Imaging" - IEEE Intl. Conf. on Aerospace Electronics and Remote Sensing Technology (ICARES), Yogyakarta, Indonesia, 2014