Bharathwaj **Krishnaswami Sreedhar**

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Indian | Ludwigsburg, Germany

Education

KTH Royal Institute of Technology — *Stockholm, Sweden*
MSc in Computer Science, Autonomous Systems (EIT) | Grade: B (Highest - A) — *Expected Sept 2020*
Courses: Deep Learning - Advanced, Applied Estimation, Scalable Machine Learning

Technische Universität Berlin — *Berlin, Germany*
MSc in Computer Science, Autonomous Systems (EIT) | GPA: 1.98 (Highest - 1.0) — *Expected Sept 2020*
Courses: Machine Intelligence, Robotics, Applied AI, Hybrid Systems

National Institute of Technology, Tiruchirappalli — *Trichy, India*
B.Tech in Electrical and Electronics Engineering | GPA: 8.35 / 10.0 — *Graduated May 2018*

- **Courses:** Pattern Recognition, Image Processing, Data Structures, Signal Processing
- Head of web operations and System administrator for NITTFEST'17.

Skills

Programming Languages:	C / C++, Python, Java, Matlab, SQL, PHP, Embedded C
Frameworks and Tools:	Tensorflow, PyTorch, NNabla, OpenCV, ROS, CUDA, Spark, Git, CARLA, Android
Spoken Languages:	English, German, Tamil, Hindi

Experience

Sony R&D | SL1 — *Stuttgart, Germany*
Master Thesis | AI Speech and Sound Group — *Feb 2020 - July 2020*

- Worked on Bayesian optimization for Neural Architecture Search (NAS)
- Implemented specialize graph kernels to identify optimal architecture using Gaussian modeling.
- Adapted Graph convolutional network for best architecture search.
- Achieved over 100x improvement compared to random Search on NASBench-101.

National University of Singapore — *Singapore*
Summer Research Intern | OEIL — *May 2017 - Aug 2017*

- Developed a custom CNN architecture for semantic segmentation.
- Separated seven layers of RNFL from monochrome OCT scans .
- Implemented an algorithm to detect and trace the contour of Bruch's membrane in a 3D volume scan.

Publication

Deep Learning for Hardware-Constrained Driverless Cars
Published IEEE Computer, Software and Applications 2020 [DOI 10.1109/COMPSAC48688.2020.00013]

DRUNET: A Dilated-Residual U-Net Deep Learning Network To Segment ...
Biomedical Optics Express –Vol 9, Issue 7 (2018)

Projects

Reinforcement Learning for Autonomous Car — *KTH, Stockholm*
CARLA, TF — *Oct 2019 - Jan 2020*

- Predicted steering angles for an autonomous car in CARLA simulator.
- Compared Deep Q learning and Imitation learning approaches.
- Optimized both algorithms for deployment in a resource limited system.

Vehicle detection and tracking — *Technische Universität Berlin*
Keras, OpenCV — *May 2019 - July 2019*

- Implemented a real time vehicle and pedestrian detection and tracking system.
- Implemented SORT tracker to avoid loss of information after occlusion.
- Statistics from tracking were used to estimate traffic density and identify accidents.

Other Projects

- Reinforcement learning for autonomous car - CARLA, TF
- Residual Based Image Compression using Autoencoders - PyTorch
- Distributed Multi Agent Coordination - ROS, Python
- Mobile Robot Localization using Particle Filtering - ROS, C++
- Optimization of Binary Neural Nets (NeurIPS 2019 Reproducibility Challenge) - TF
- Accelerated Vector Autoregression for fMRI - CUDA C++