ASHISH RAO MANGALORE

 https://ashishrao7.github.io/ashish-rao/   ✉ ashishrao.mangalore@tum.de

EDUCATION	**Master of Science in Neuroengineering (MSNE),** *Technische Universität München, München, Germany*	*Oct 2019-Present*
	Bachelor of Engineering in Electrical and Electronics CGPA 9.11/10 *R.V College of Engineering, Bengaluru, KA, India*	*Aug 2012-May 2016*
INTERESTS	Brain Computer Interfaces, Prosthetics, Event Based Cameras, Signal Processing, Computational Neuroscience, Neural Engineering, Machine Learning	
PROJECT CONTRIBUTIONS	**Implementation of Proximity Operators and ISTA in ELSA** • Contributed to ELSA, a tomographic Reconstruction software developed at the Department of Informatics, TUM (https://gitlab.lrz.de/IP/elsa) • Designed, Implemented and tested Proximity Operators (Soft-Thresholding), LASSO problem and the ISTA Solver in C++	

PROFESSIONAL EXPERIENCE	**Teaching Assistant for Neurorehabilitation** *Institute of Cognitive Systems, Technische Universität München*	*Jul 2020-Sep 2020*
	• Design Tutorials for the neurorehabilitation course • Sourcing of materials for building a robotic exoskeleton for rehabilitation • Designing experiments with hardware and software for the exoskeleton	
	Project Assistant *Indian Institute of Science, Bengaluru*	*Sept 2018-Oct 2019*
	• Research on 3-D Object Reconstruction Methods with Neuromorphic Cameras with Prof. Chandrasekhar Seelamantula and Prof. Chetan Singh Thakur. Developed a new method using structured light which was faster than the SOTA by a factor of n. (https://github.com/ashishrao7/NFPP) • Contributed to preliminary experiments on a Sampling theory for Neuromorphic Sensors	
	Associate Software Engineer *Robert Bosch Engineering and Business Services, Bengaluru*	*Sep 2016-May 2018*
	• Carried out energy analytics for industrial plants. • Planned and ran analyses for optimizing the energy consumption of plants • Worked on demand forecasting using LSTMs to help stakeholders estimate energy to be purchased for the next day. • Automated processes to generate and keep track of part numbers for the machine building team.	
	Intern *Robert Bosch Engineering and Business Services, Bengaluru*	*Jan 2016-Apr 2016*
	• Worked on reducing error in solar panel temperature predictions. Developed models using regression and ANNs. • Developed a workflow to visualize the trend of the collected data points available at each second throughout the day using MATLAB and Simulink.	

PUBLICATIONS	**A. Rao Mangalore**, C.S. Seelamantula, and C.S. Thakur, "Neuromorphic Fringe Projection Profilometry", Signal Processing Letters, September, 2020
	A. B. Harish, G. M. Deepak, **A. Rao Mangalore**, and C.S. Seelamantula,"Depth Estimation using the Riesz Transform", To be submitted to IEEE Transactions on Computational Imaging
	R. Vijaykumar, R. Rudramoorthy, and **A. Rao Mangalore,** (2017). Prediction of solar PV panel temperature using mathematical models and artificial neural networks. Journal of Computational and Theoretical Nanoscience 14, 4986–4997.

HONORS & AWARDS	**Invited Speaker SPCOM 2020 - International Conference on Signal Processing and Communications** Talk titled "Object Scanning and the Dynamic Vision Sensor"	*Jul 2020*
	1st IEEE Brain BR41N.IO Prize at BR41N.IO Brain-Computer Interface Designers' Hackthon 2020 Awarded 1st Place in the Programming Projects category of the hackathon for our solution VibeLight.	*Jun 2020*
	3rd in the Graduating Batch of EEE, RVCE Placed 3rd on the basis of 4 year CGPA at the end of the undergraduate course among the graduating batch of 63 students	*2016*
	4th in Sparkfun Autonomous Vehicle Challenge Placed 4th in the autonomous vehicle challenge organized by spark fun electronics at Denver, Colorado	*Jul 2015*
	40th at DBF 2015, AIAA Represented the College Aerodesign team at the Prestigious Design/Build/Fly 2015 contest organized by AIAA in Tucson, Arizona. Finished 40th out of 100 teams	*Apr 2015*

TECHNICAL SKILLS	**Programming Languages**	*Python, C++17, Matlab*
	Frameworks	*Pandas, Keras, Pytorch, ROS*
	Computer Aided Design	*Autodesk Fusion 360, EagleCAD*
	Other	*ArduPilot, Arduino, Git, LaTeX*

EXTRA-CURRICULAR ACTIVITIES	**Avionics Engineer** *Project Vyoma, Aerodesign Team, RVCE*	*Apr 2013-May 2016*
	• Made unmanned arial vehicles (fixed-wing and rotory) flight ready. • Deployed autonomous UAVs (fixed-wing and rotory) using the Ardupilot/ Pixhawk platform. • Carried out conceptual design of a solar powered fixed wing UAV which was later fabricated in the workshop and tested. • Built and deployed arial photography ready drones to be be used for filming RVCE's college fest. • Built a thrust rig to test thrust generated by different motor-propellor combinations • Participated in international competitions representing the college.	

	Mentor and Avionics Team Lead *Project Vyoma, Aerodesign Team, RVCE*	*Aug 2014-* *May 2016*
	• Oversaw day to day activities of the electronics subsection of the team • Mentored new recruits to the team and oversaw their development • Interacted with sponsors to raise funding for the operation of the team	

COLLEGE SERVICE	**Buddy Program Co-ordinator** *Institute of Cognitive Systems, TUM*	*Aug 2020-* *Nov 2020*
	• Facilitating integration of freshmen joining the Master of Science in Neuroengineering at TUM in the winter of 2020	
	Student Placement Co-ordinator *Dept of Electrical and Electronics Engineering, RVCE*	*Aug 2015-* *Jun 2016*
	• Co-ordinated between students of Electrical & Electronics Engineering and the Placement Dept of RVCE for the smooth functioning of the placement process. • Managed hosting of visiting employers, scheduling of events and addressed concerns and grievances of all parties involved in the placement process.	

CERTIFICATIONS	**Reinforcement Learning** (Center for Continuing Education, IISc)	*Aug 2018-* *Dec 2018*
	Deep Learning Specialisation *Coursera*	*2018*
	Machine Learning Engineer Nanodegree *Udacity*	*2017*
	Build a Modern Computer from First Principles: From Nand to Tetris *Hebrew University of Jerusalem, Coursera*	*2017*
	edX Honor Code Certificate for Circuits and Electronics *edx:MITx*	*2013*
	edX Honor Code Certificate for Electricity and Magnetism *edx:MITx*	*2013*

LANGUAGES KNOWN	**English**	*Native or bilingual proficiency*
	German	*A2 Level Proficiency, Certified by Göethe Institut*
	Kannada	*Native or bilingual proficiency*
	Hindi	*Professional working Proficiency*
	Sanskrit	*Elementary Proficiency*