

ASHISH RAO MANGALORE

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EDUCATION	Master of Science in Neuroengineering (MSNE), <i>Technische Universität München, München, Germany</i>	Oct 2019- Present
	Bachelor of Engineering in Electrical and Electronics CGPA 9.11/10 <i>R.V College of Engineering, Bengaluru, KA, India</i>	Aug 2012- May 2016
INTERESTS	Brain Computer Interfaces, Robotics, Event Based Cameras, Signal Processing, Computational Neuroscience, Neural Engineering	
PROJECT CONTRIBUTIONS	Implementation of Proximity Operators and ISTA in ELSA <ul style="list-style-type: none">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 <i>Institute of Cognitive Systems, Technische Universität München</i>	Jul 2020- Sep 2020
	<ul style="list-style-type: none">Design Tutorials for the neurorehabilitation courseSourcing of materials for building a robotic exoskeleton for rehabilitationDesigning experiments with hardware and software for the exoskeleton	
	Project Assistant <i>Indian Institute of Science, Bengaluru</i>	Sept 2018- Oct 2019
	<ul style="list-style-type: none">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 <i>Robert Bosch Engineering and Business Services, Bengaluru</i>	Sep 2016- May 2018
	<ul style="list-style-type: none">Carried out energy analytics for industrial plants.Planned and ran analyses for optimizing the energy consumption of plantsWorked 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 <i>Robert Bosch Engineering and Business Services, Bengaluru</i>	Jan 2016- Apr 2016
	<ul style="list-style-type: none">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	<p>A. Rao Mangalore, C.S. Seelamantula, and C.S. Thakur, "Neuromorphic Fringe Projection Profilometry", (2020) - Submitted to <i>SP Letters</i> for review.</p>	
	<p>A. B. Harish, G. M. Deepak, A. Rao Mangalore, and C.S. Seelamantula, "Depth Estimation using the Riesz Transform", To be submitted to <i>IEEE Transactions on Computational Imaging</i></p>	
	<p>R. Vijaykumar, R. Rudramoorthy, and A. Rao Mangalore, (2017). Prediction of solar PV panel temperature using mathematical models and artificial neural networks. <i>Journal of Computational and Theoretical Nanoscience</i> 14, 4986–4997.</p>	
HONORS & AWARDS	<p>Invited Speaker SPCOM 2020 - International Conference on Signal Processing and Communications Talk titled "Object Scanning and the Dynamic Vision Sensor" Jul 2020</p>	
	<p>1st IEEE Brain BR41N.IO Prize at BR41N.IO Brain-Computer Interface Designers' Hackthon 2020 2020 Awarded 1st Place in the Programming Projects category of the hackathon for our solution VibeLight.</p>	
	<p>Placed 3rd in the Graduating Batch of EEE, RVCE 2016 Placed 3rd on the basis of 4 year CGPA at the end of the undergraduate course among the graduating batch of 63 students</p>	
	<p>4th in Sparkfun Autonomous Vehicle Challenge Jul 2015 Placed 4th in the autonomous vehicle challenge organized by spark fun electronics at Denver, Colorado</p>	
	<p>40th at DBF 2015, AIAA Apr 2015 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</p>	
TECHNICAL SKILLS	Programming Languages	<i>Python, C++17, Matlab</i>
	Frameworks	<i>Pandas, Keras, Pytorch, ROS</i>
	Computer Aided Design	<i>Autodesk Fusion 360, EagleCAD</i>
	Other	<i>ArduPilot, Arduino, Git, LaTeX</i>
EXTRA-CURRICULAR ACTIVITIES	<p>Avionics Engineer Apr 2013-May 2016 <i>Project Vyoma, Aerodesign Team, RVCE</i></p>	
	<ul style="list-style-type: none"> • Made unmanned arial vehicles (fixed-wing and rotary) flight ready. • Deployed autonomous UAVs (fixed-wing and rotary) 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 <i>Project Vyoma, Aerodesign Team, RVCE</i>	Aug 2014- May 2016
	<ul style="list-style-type: none"> • 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 <i>Institute of Cognitive Systems, TUM</i>	Aug 2020- Nov 2020
	<ul style="list-style-type: none"> • Facilitating integration of freshmen joining the Master of Science in Neuroengineering at TUM in the winter of 2020 	
	Student Placement Co-ordinator <i>Dept of Electrical and Electronics Engineering, RVCE</i>	Aug 2015- Jun 2016
	<ul style="list-style-type: none"> • 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 <i>Coursera</i>	2018
	Machine Learning Engineer Nanodegree <i>Udacity</i>	2017
	Build a Modern Computer from First Principles: From Nand to Tetris <i>Hebrew University of Jerusalem, Coursera</i>	2017
	edX Honor Code Certificate for Circuits and Electronics <i>edx:MITx</i>	2013
	edX Honor Code Certificate for Electricity and Magnetism <i>edx:MITx</i>	2013
LANGUAGES KNOWN	English	<i>Native or bilingual proficiency</i>
	German	<i>A2 Level Proficiency, Certified by Goethe Institut</i>
	Kannada	<i>Native or bilingual proficiency</i>
	Hindi	<i>Professional working Proficiency</i>
	Sanskrit	<i>Elementary Proficiency</i>