

# VENGATESAN GOVINDARAJU

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EDUCATION	<p><b>Doctor of Philosophy</b>, Robotics, (Jan 2013 - April 2017) National University of Singapore Supervisor: Assoc. Prof. Gerard Leng Siew Bing <i>Thesis Title: Path Planning Strategies for Visibility Enhancement with Unmanned Aerial Vehicles in Cluttered Environments</i> (Please visit website for abstract/videos.) <i>Modules completed during PhD:</i> Advanced Robotics · Machine Vision · Visual Computing · Evolutionary Computation · Soft Robotics · Discrete Events Systems</p> <p><b>Bachelor of Technology</b>, Mechanical Engineering (July 2007 - May 2011) National Institute of Technology - Trichy CAP: 8.97 / 10</p> <p><b>Graduate Certificate in Management-of-Technology</b> (Aug 2015 - May 2016) Dept. of Engg. Technology and Management, National University of Singapore.</p> <p><b>Master of Business Administration</b> (Unaccredited) (May 2018 - Feb 2019) Smartly Institute, Washington, D.C. ( Online MBA program ).</p>
PROFESSIONAL EXPERIENCE	<p><b>Senior Engineer (Navigation)</b> at ‘Aitech Robotics and Automation Pte. Ltd.’ (Singapore), (July 2017 - Present) Developed localization and navigation algorithms, for several heavy-duty autonomous mobile-robot platforms (varied drive systems), for use in construction and logistics industries. Managed vendors / customers and led a team of engineers to successfully deliver the project on time.</p> <p><b>Remote Intern</b> at ‘TheConstructSim’ (Barcelona), (Jan 2017 - Apr 2017) Developed repositories for robot simulations using using ROS, Gazebo OpenAI-Gym.</p> <p><b>Aviation Officer</b>, at Mumbai International Airport, (Sept 2011 - Nov 2012) <b>Indian Oil Corporation Ltd.</b> Developed a software application for efficient scheduling of Aircraft Refuelling Operations, Maintenance in-charge of fuel pumping equipments, vehicles.</p>
TEACHING EXPERIENCE	<p><b>Teaching Assistant</b> for modules EG1109 - Statics and Mechanics of Materials and ME3112 - Mechanics of machines. (Spring 2014, Fall 2015 resp.)</p>
PUBLICATIONS	<p><b>Conferences</b></p> <ol style="list-style-type: none"><li>Vengatesan G, Gerard Leng, Zhang Qian, <i>Visibility-based UAV path planning for surveillance in cluttered environments</i> , 12th IEEE International Symposium on Safety, Security, and Rescue Robotics, Toyako - Japan (Oct - 2014)</li><li>Vengatesan G, Gerard Leng, Zhang Qian, <i>Visibility Maximization for Multi-UAV Surveillance over Urban Regions</i>, Singapore Airforce Technology Exhibition and Conference, Singapore (April - 2014)</li></ol> <p><b>Journals</b></p> <ol style="list-style-type: none"><li>Vengatesan G, Gerard Leng, Zhang Qian, <i>Multi-UAV Surveillance over Forested Regions</i> , Photogrammetric Engineering and Remote Sensing, No. 12, pp. 1129-1137(9) (Dec - 2014)</li></ol>

<b>ACADEMIC ACHIEVEMENTS</b>	<p><i>Image Processing Robotics:</i></p> <ul style="list-style-type: none"> <li>• Won the <b>Second Prize</b> in <b>IIT-Bombay TechFest - 09</b> in the GOAL Event for building an autonomous Image Processing Soccer playing robot.</li> <li>• Won the Second prize in an obstacles avoiding IP robot competition in <b>IIT Madras Shaastra - 09</b>. Won prizes for similar events in PSG College of Technology, Coimbatore and SRM University, Chennai.</li> </ul> <p><i>BAJA - SAE All Asia:</i> Participated in <b>SAE-Baja</b> All Asia 2010 - All terrain vehicle design and fabrication competition held at NATRIP facility, Pithampur, Indore.</p>
<b>PROJECT WORKS</b>	<ul style="list-style-type: none"> <li>• Final Year Project on <b>Design and Control of Stewart Gough Platform</b> using MATLAB, SimMechanics and SimHydraulics at <b>NIT Trichy</b>, (Jan - May 2011)</li> <li>• <b>Stereo Camera Calibration and 3D coordinate measurement using Stereovision</b> at Engineering Design Dept, <b>IIT Madras</b> (May 17th - July 17th 2010)</li> <li>• <b>Optimization of Magnetic Abrasive Finishing Process using Breeding Swarm Optimization</b> at Mechanical Engg Dept, <b>IIT Kanpur</b> (May 5th - July 5th, 2009)</li> </ul>
<b>AWARDS/ SCHOLARSHIPS</b>	<p>NUS Research Scholarship for PhD at NUS, Singapore (Jan 2013 to Dec 2016)</p> <p>Summer Fellowship Programme at IIT Madras (May to July, 2010)</p> <p>Summer Undergraduate Research Grant for Excellence (SURGE) at IIT Kanpur (May to July, 2009)</p>
<b>TRAINING</b>	<ul style="list-style-type: none"> <li>• Attended a one week <b>Summer School on Multi-Robot Systems</b> (June 2016) conducted by IEEE Robotics &amp; Automation Society and also presented a poster.</li> <li>• Attended a workshop on <b>Digital Radiography</b> during Non Destructive Evaluation Conference (NDE-2009). Attended a workshop on <b>Heat Treatment Processes and Welding Technology</b> conducted by the Indian Welding Society and Indian Institute of Metals, Trichy.</li> </ul>
<b>COMPUTER SKILLS</b>	<ul style="list-style-type: none"> <li>• <i>Operating Systems</i> : <b>Linux</b>, Windows</li> <li>• <i>Languages</i> : <b>C++, Python</b></li> <li>• <i>Packages</i> : <b>Robot Operating System (ROS), Gazebo, MATLAB, Simulink, AutoCAD, Solidworks, Blender, CImg/OpenCV, OpenPCL, L<sup>A</sup>T<sub>E</sub>X.</b></li> </ul>
<b>EXTRA- CURRICULAR ACTIVITIES</b>	<p><i>Positions of Responsibility :</i></p> <ul style="list-style-type: none"> <li>• Manager of a hands-on robotics workshop for building an autonomous ‘Sumo-Robot’s which had around 250 participants.</li> <li>• Event Manager of an Image Processing Robotics event ‘Snakes and Ladders’ in a national level technical festival.</li> <li>• Organized a science exhibition for students from rural schools and exhibited an Image Processing Robot to motivate the students to continue their studies.</li> </ul> <p><i>Sports / Other relevant informations:</i></p> <ul style="list-style-type: none"> <li>• Parade Commander and Second Best Cadet at the inter-college NCC drill competition. Awarded the ‘Best Firer’ in the rifle firing competition.</li> <li>• Hobbies: Swimming, Badminton, Guitar.</li> <li>• <i>Languages:</i> Fluent in English, Tamil and conversational Hindi</li> </ul>