ANIL HARISH

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Education

Colorado State University, Fort Collins, CO **Aug 2016 – Dec 2018**
Master of Science, Electrical Engineering – GPA (Program of Study): 3.5/4.0
Coursework: Robot Mechanics and Control, Robot Programming and Simulation, Biologically Inspired Robotics, Dynamics of Complex Engineering Systems, Embedded Systems Design, Engineering Risk Analysis, MEMS.

Visvesvaraya Technological University, Belgaum, Karnataka, India **Sep 2010 – June 2014**
Bachelor of Engineering, Electronics and Communication – GPA: 3.4/4.0
Coursework: Artificial Neural Networks, Control Systems, Digital Image Processing, Information Theory & Coding.

Technical Skills

Programming:	C/C++, Git, Ladder Logic, PLC, 6 Axis Robots – ABB, FANUC and KUKA, Python (Basic).
Packages:	ROS, OpenCV, MATLAB, SIMULINK, RViz, Gazebo, PCL (Basic), TensorFlow (Basic).
Automation and Design:	RSLogix 500, Allen Bradley MicroLogix, HMI, AutoCAD, SolidWorks.
Computer Vison and AI:	Ant colony and Particle Swarm Optimization, Object tracking, Path Planning, Mapping, Navigation, Neural Networks, Extended Kalman Filtering.
Hardware:	Arduino, Raspberry Pi, MSP430, XBEE, Silicon Labs C8051F500, Jetson (Basic).

Recent Projects

Ant Colony Optimization and Formation Control of Swarm Robots, *Graduate Research Project* **Spring 2018**
- Designed autonomous robots and omnidirectional IR transceiver to mimic swarm intelligence in ants.
- Optimized rapidly exploring random tree exploration algorithm to efficiently search food source by 1.7x using **ROS** and **OpenCV.** Simulated sensor noise, distortion, and environment dynamics in **Gazebo**.
- Performed SLAM by exploiting Rao-Blackwellized particle filter using ultrasonic rangefinders to lower cost.

Task Level Controller for 6 Axis Robots, *ECE 455 and MECH 564*, Colorado State University. **Fall 2017**
- Developed nonlinear controller in **MATLAB** to linearize & decouple robot dynamics model in the task space.
- Increased tool centre point accuracy to 0.3mm using Damped Least Squares and Runge – Kutta 4th order method to calculate joint angles for trajectory generation and path planning validated in **SIMULINK**.
- Investigated multivariable control for monitoring tool process parameters to anticipate quality issues.

Professional Experience and Certifications

VOLVO Group, Application Hosting Services .NET, *Infrastructure Engineer* **Aug 2014 – Jul 2016**
- Optimized BMC Remedy algorithm for impact analysis of infrastructure changes, decreasing response time by 3 milliseconds per configuration item as **Change Advisory Board representative**.
- Solved 7 Major Incidents as OS and storage **Root Cause Analysis Engineer** in windows servers and clusters hosting revenue critical applications (Siemens PLM, IIS, SID etc).
- Developed PowerShell scripts for periodic upgrade of VMware host version and Symantec Endpoint Protection in 8500+ production servers resulting decrease in deployment failures by 40%.

TATA POWER SED, Research and Development, *Embedded Systems Intern* **Spring 2014**
- Built Software Defined Network for radar centric defence system using erlang based OpenFlow controller.
- Developed drivers for C8051F500 Microcontroller and SPARTAN 6 FPGA to interface between the devices in the control plane and the data plane in red and black security.

AXELOS Global Best Practice: ITIL® Certified APMG International. Certificate No. 03107580-02-ZEKV **May 2015**

Leadership and Awards

Performance Award*, VOLVO:* Best engineer of 1st Quarter 2016, for client satisfaction (ASSA ABLOY) and most reliable deliveries, ITIL Standard Operating Environment implementation, and ticket resolution interval.

Co-Founder and Secretary, *IEEE Student Branch, Visvesvaraya Technological University*
- Organized Elements & Optimus IEEE technical fests hosting 12 institutions & 2000+ students promoting STEM.

Team Leader, *Fixed Wing UAV Workshop*, Aerotrix: Won 1st place for best design and fabrication among 16 teams for implementing winglets to reduce drag and improve battery efficiency by 10%.