Ganindu Nanayakkara

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Objective Reference

Education B.S. in Mechatronics Engineering , Asian Institute of Technology, Thailand (July 2014).

Experience

Present II: Research Assistant: Vehicle development,
Since Nov 2015

- Member of the Team at **Microcab Industries**
  http://www.microcab.co.uk
- Involved in Electric, H2E Prototype vehicle development.

Highlights: VCU development, Embedded Systems, Simulation, Safety Cases.

Present I: Research Assistant: Advanced Hybrid Powertrain Development,
Since Dec 2014

- Member of the Control and Sensor development team of the **GKN GyroDrive** a former **Williams Hybrid** prototype development.

Highlights: Motohawk Controller, Embedded Systems, Optimizing, Project work, Safety, Simulation, Testing, Smart sensor development, MKX Flywheel Energy Storage.

Trainee Engineer, Camoplast Solideal, Midigama, Sri Lanka (3m). Summer 2012

- Carried out preventive maintenance in the **Air Tyre** division.
- Did Troubleshooting in tyre curing oven lines and general **Air Tyre** machinery.
- Supervised the power line installment for a 6kV mixer from installing the Transformer to the installment of the machine.
- Supervised the installation of a refurbished roller mill control system.

Highlights: Co-operate environment, Working with technicians, On the spot troubleshooting, Project work, Factory safety, Leadership training program, Maintenance supervision, Parts ordering, Lean manufacturing, ISO standards.

Research Assistant, Mechatronics Laboratory, Chulalongkorn University, Thailand. Summer 2013

Mentored by: Dr. Ratchatin Chancharoen.

- Development of a FPGA/CPLD based controller for a FANUC™ robot.
- Assisting graduate students to set up ROS in the Asctec Pelican Quad.
- Partnered in the designing, building and deployment of a Mechanum driven robot for the Thailand automation challenge,(worked in a ROS integration, application of the kinect sensor,development of the safety override).
  Link to video: http://www.youtube.com/watch?v=TE3Cqwn61A0

Key areas: ROS, NI LabView®, Mecanum drive, Matlab®, Simulink®, Vision, PCL, Embedded systems, Microsoft® Kinect, FANUC™, 3D printing.

Capstone project

Development of a Reconfigurable Ledge Climber

- Conceptualized, designed, developed and implemented two modules of the class, modular reconfigurable robots.
- Performed tasks of locomotion and ledge climbing.
- Analyzed the system response and behavioral characteristics and experimented on the performance and capabilities module wise.
- Experimented on multiple robot collaboration using the two modules to achieve the goals utilizing their capabilities and proved that the two robots can accomplish a task collaboratively which was previously impossible for a single module. Link to video: `http://www.youtube.com/watch?v=ny3iutQIQeU`

Key areas: Modular reconfigurable robotics, Multiple robot collaboration, DC motor control, Control algorithms, Embedded systems, RF communication.

Areas of Interest

- Control applications development, Autonomous navigation, Drones/UAVs, AI.
- Sensor fusion, LQE, Inter Process Communication(IPC).
- Cloud robotics.
- Distributed systems, Swarm robotics/Multiple robot collaboration, Visual servoing.
- Formula1 Racing, Formula e Racing, Electric Propulsion/Drivetrain.
- Rocketry, reusable space vehicles.
- Rapid prototyping.
- Exoskeletons.

Academic Projects *(other)*

- Obstacle avoiding robot,*(built from scratch).*
- Stair climbing robot,*remotely controlled, for praxis*
- Design of a skeet launcher, *Engineering mechanics.*
- Azimuth,*(pneumatic powered projectile)* servo controlled turret*, (targeting via vision, using the Matlab® image processing toolbox was developed separately later.)*
- Detection of a virtual object by the Willow Garage™ **PR2** robot in Gazebo(ROS) simulator *, Image processing class project.*
- Tracking objects using a native descriptor(designed by me) from the Microsoft® Kinect camera *, Machine vision class project.*
- Design, developed and simulation of a traffic light system using PLC. *Siemens S7.*
- Implementation of an Arduino ROS node *, AIT Vision and Graphics Laboratory.*
- Partnering in a project using the Parrot. ARdrone®(ROS) for Human Detection in disaster situations by Haar-like fearure detection *, AIT Vision and Graphics Laboratory.*

Honors and Awards

Complimentary award

The Mecanum project in support for the Chulalongkorn team in the internship period received the award from MTEC in the Thailand Automation Challenge.

December 2013

Sri Lanka Young Computer Scientist of the year award

- Silver award: National.
- Gold colours: Best Hardware Design, National.

Received this project for the High school project of a secure gate and a blender implemented using turbo pascal in the competition held by the ICT agency of Sri Lanka(**ICTA**) and the Sri Lanka Association for the Software Industry(**SLASI.**)

High School St. Thomas' College Matara, Sri Lanka.

Sports

- Basketball: Represented the School $U17/U19$ Basketball teams and the Country for the AIT mini olympics.
- Chess: Represented the school chess team.
- Open water swimming*(Sea)*: as a hobby *Polhena Sri Lanka.*
- Surfing: as a hobby, *Waligama, Midigama Sri lanka.*
- Mountain Biking and Hiking.
- Canoeing.

Extra Curricular Activities

- Co-Founder of the S. Thomas' College Electronics Bureau for Innovative Solutions(**EBIS.**)
- Member of the 1st Matara Scout Platoon.
- Member of the Young Inventors Club.
- Captain of the High School debating team.
- Matlab® community fellow. `http://www.mathworks.com/matlabcentral/fileexchange/authors/455468`

High school Project Experimental Project to determine the condition of the water using operational amplifiers and the $PIC16f877A$ microcontroller, electronics implementation.

familiar programing languages

- C/C++/MicroC®/ASM
- Matlab®/ Simulink®/Java/Python/Ladder/ LabView®

familiar Platforms and frameworks

- Windows®, Linux*(Ubuntu)*, OSX®, ROS, Matlab®, LabView®

Networking

- `http://linkedin.com/in/ganindu`
- `https://twitter.com/ganindu`
- `https://www.facebook.com/ganindu`

Referees

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Declaration **I hereby certify that above particulars given are true and correct to my best knowledge.**

Yours Sincerely,
Ganindu Nanayakkara