

# Chidananda Matada Shivananda

cmatadas@villanova.edu  
(571)-217-4000  
291 Avon Road Apt #G217  
Devon, PA 19333, USA



## Summary

- \* Hands-on **Embedded/Control Engineering** with 3+ years of combined industry and research experience.
- \* Industry experience in **Automotive Software development, testing** and Research on **Non linear system analysis**.
- \* Pursuing MS program in Electrical Engineering, specializing in **System Dynamics and Controls**.
- \* Strong Technical background, excellent analytical ability, good communications skills, team player and goal oriented with a commitment towards excellence.

## Education

**Villanova University, Villanova, PA, USA.**

MS in System Dynamics and Controls.

**GPA 3.53**

(Fall 2012-present)

**Visvesvaraya Technological University, Belgaum, India.**

BE in Electronics and Communication.

**GPA 3.7**

(2006-2010)

## Skills

Assembly, C, MATLAB, Python, Simulink, ETAS labcar, ETAS INCA, ETAS ASCET, Texas Instruments MSP430, Infineon tri-core processor (TC1797), Atmel 89C51, Raspberry pi, Beaglebone, Lego Mindstorm, Arduino Windows, Ubuntu, Embedded Linux.

## Work Experience

Feb 2014 - Present

\* **Senior Engineer** for team WORX representing Villanova University at RobotX, Singapore 2014.

Jan 2013 - Present

\* **Teaching Assistant** for Engineering System Modelling & Control, MATLAB Basics.

Aug 2012 - Sept 2013

\* **Research Assistant** under the guidance of Prof. J.C Peyton Jones. Research on response of nonlinear systems. Also involved in MATLAB coding and Simulink development.

Sep 2010 - Apr 2012

\* **Software Engineer** for Robert Bosch Engineering and Business Solutions, Bangalore. Worked for Engine management team of PSA Peugeot Citroën/BMW Prince Engines. Involved in integration, testing & debugging of ECU software. Also responsible for planning and execution of data set merges. Hands-on experience debugging with UDE, testing on ETAS labcar, usage of ETAS INCA and development on ETAS ASCET.

## Projects

**Simulink based Human Gesture classification of Kinect depth data.**

Dec 2013

- Back propagation neural network was used to classify Human gesture on Simulink from Kinect depth sensor data.

**Solar plant setup for an organic farm in a remote village Baclayan, Philippines.**

Jan 2013

- During a service trip, Worked onsite as a team lead to assess and improve the existing setup of the solar plant at the organic farm. Work was also done to expand and increase the efficiency of the solar plant.

**Parametric Sensitivity based response prediction for change in the parametric value.**

Jan-April 2013

- Partial Jacobian was used to find the sensitivity of the differential equation parameters over the frequency range. The change in system response with respect to change in these parameters was predicted and verified.

**Match predictions related to stability of nonlinear systems.**

Sept-Dec 2012

- Extraction of Sine and Cosine components from a simulated system (model on simulink) output to verify predictions regarding stability with the approximated system response.

**Application of Feedforward control to an inverted pendulum system.**

April 2013

- PID and PID+Feedback control was applied individually on a simulated Inverted pendulum to prove that PID+feedback control gives a better response.

**Balancing of a Modified Inverted Pendulum.**

Jan -June 2010

- Accelerometer and gyroscope data was fused using a complementary filter. The angle estimated was fed to a PID control loop to balance the robot. MSP430 microcontroller (from Texas Instruments) was used.

**Other hobby projects.**

- Raspberry pi based projects, Line follower, Radio controlled robot, Digital clock, Laser controlled switch, Path planning and control of a mobile robot using an overhead camera on MATLAB.

## Rewards

- \* Runner-up in Innovation Encounter Challenge, held at Lawrence Technological University (LTU), Detroit USA.
- \* Was given "Achievement Award" in Robert Bosch Engineering and Business Solutions, Bangalore India for my contribution to the project.
- \* Won awards in various National and Inter University Robotics competitions.