

ARVIND JAYARAMAN

17017 Boulder Drive, Northville, MI 48168, U.S.A
Phone No: (734) 709-5592, Email: kjarvind@umich.edu

OBJECTIVE

- To obtain a full time position as a software engineer in the field of model based design and automatic code generation

EDUCATION

M.S, Electrical Engineering (GPA 8.19/9.0)
University of Michigan, Ann Arbor

Dec 2007

Fall 2006

- Control Systems Analysis and Design, EECS 460 (A)
- Embedded Control Systems, EECS 461 (A+)
- Linear Systems Theory, EECS 560 (A)

Winter 2007

- Linear Feedback Control, EECS 565 (A)
- Nonlinear Control, EECS 562 (A)
- Linear Programming, IOE 510 (A)

B.E, Electronics and Communication (GPA 3.8/4.0)
University of Delhi, New Delhi

April 2006

- Electronics I and II
- Bipolar and MOS analog circuits
- Digital Circuits and Systems I and II
- Fault Tolerant Computing
- Computer Systems Organization
- Microprocessors
- Electrical Machines I, II
- Data Structures in C

Signals and Systems
Analog and Digital Communication
Principles of Communication Circuits
Filter Design Theory
Antenna theory
Network Analysis and Synthesis
Digital Signal Processing
Computer Networking

WORK EXPERIENCE (Internships)

The MathWorks, Inc, Novi, MI
Production Code Generation Intern

Summer 2007

- Developed a reference guide that shows the mapping of typical C language constructs into models in order to automatically generate code from them using Real Time Workshop Embedded Coder.
- Extended the product capability to support bit-mapped registers by developing a custom storage class capable of generating structures with variable length bit-fields and automatically padding empty bits.
- Developed a pilot feature that allows users to obtain data structures with efficient memory-alignment for Direct Memory Access (DMA) transfers.
- Developed solutions to obtain C++ operator overloading statements in the generated code.
- Demonstrated to key customers on how to integrate Configuration Management tools with Simulink.
- Facilitated a mutually beneficial meeting between The MathWorks and The University of Michigan to exchange contacts and help influence a course on embedded control systems being taught at the university.

PROJECTS AND AWARDS

- **Adaptive Vehicle Cruise Control System, (Fall 2006)**
 - Modeled, simulated and successfully tested an adaptive cruise control algorithm on the MPC5553 Freescale microprocessor using automatic code generation with MATLAB/SIMULINK and RAppID toolbox, as part of an embedded control systems (EECS 461) course. The algorithm identifies a lead vehicle from data sent over a CAN bus from other driving simulators and maintains a constant position with respect to the lead vehicle if it is within a critical distance.
- **Unmanned Aerial Vehicle Project (UAV), (Winter 2006)**
 - Developed the software to autonomously navigate a quad-rotor UAV equipped with a Global Positioning Satellite (GPS) system and inertial sensors.
 - Implemented a Neuro-Fuzzy control algorithm on embedded systems to stabilize the craft in a horizontal position.
 - Won “*Most innovative design*” award at **International Aerial Robotics Competition, (IARC) 2006**.
 - Website: www.uavindia.com/index.htm
- **Autonomous Homing Robot, (Fall 2004)**
 - Developed a robot capable of homing in to the source of a radio signal while avoiding obstacles.
 - Developed the C language software for the microcontroller and the H-Bridge interface to the motors.
 - Won **the first prize** in National-level competitions held at the **Indian Institute of Technology (IIT, Delhi)** and at **Delhi College of Engineering IEEE technical festival**.

SKILLS AND LANGUAGES

- **Processors** : MPC5553 Freescale, dsPIC6014 Microchip, PIC MCU family
- **Languages** : Matlab, C, C++, Assembly Language for 8085
- **Software tools** : Matlab/Simulink/Stateflow, Real-Time-Workshop Embedded Coder, RAppID target
For Freescale’s MPC5553, Active VHDL, Orcad/Pspice
- **Other** : MS Word, Excel, PowerPoint

CURRENT ACTIVITIES

- **Graduate Student Instructor (GSI):** for the course EECS 461, Embedded control systems at the University of Michigan, Ann Arbor.

REFERENCES

- *Available upon request.*

INTERESTS and HOBBIES

- Cricket
- Lawn Tennis
- Swimming
- Classical Carnatic Music