MY1CV: Projects

Software Project (2023)

Development of a portable *harumanis* mango sorting system based on a proposed shape-based classification method (using Fourier Descriptor).

Software Project (2019)

Development of a simple software solution for testing image processing algorithm on conveyor-based vision system. It is available as an extension (my1imgproX) to the previously-developed image processing library (my1imgpro).

Software Project (2018)

Development on a basic digital electronics simulator (my1digitaljs) mainly used for teaching purposes. It is written in Javascript and meant to be run in a browser (making it cross-platform).

Soft-Core Development (2016)

An Implementation of Intel 8085-binary-compatible Microprocessor Core using Verilog. Simulated using ModelSim (Altera free version). Just to proof that this kind of project can be finished well within the time period of a bachelor's degree project (a.k.a. Final Year Project). The my1core85 code is also made available at CodeBerg.

Software Project (2014-2017)

Development of Vehicle Monitoring System software. The hardware module is developed by another team member. The software part consists of server-side code (API server) using PHP and client-side code (API client, Google Maps display) using HTML & Javascript. The API server is based on the my1apisrv code.

Software Project (2012-2014)

Software development for Wireless Sensor Network monitoring and data collection. A program (my1wsnbase) that extracts information from a WSN base node through serial port, stores data in sqlite database and acts as a simple web server (all written in C). The web server code uses the MIT-licensed mongoose (which is now a commercial software). This code is also made available at

CodeBerg.

Software Project (2011-2012)

Development on an Intel 8085 microprocessor system simulation software (my1sim85) mainly used for teaching purposes. It uses wxWidgets (a cross-platform GUI library) which enables it to be compiled for both Linux and Win32. It is an open source project available at CodeBerg.

Software Project (2011)

Development of an open source software - my1asm85 - a cross assembler for Intel 8085 microprocessor (which is used in tertiary education related to electronics engineering). It is considered complete and currently updated per need basis. It is mainly used as the foundation for another project my1sim85. It is a cross platform - can be compiled for both Linux and Win32 - console application (no GUI).

Systems Development (2007-2008)

Development of Embedded Controller Systems based on ARM controller (running Linux) and Xilinx Spartan3E FPGA for Mobile Robot Platform. Development work was done both on Windows and Linux platform. Built cross-compilers on both platform. Used buildroot to build the base system. FPGA development for servo, camera (plus image processing) and motor controllers.

Internship @ INTEL (2000)

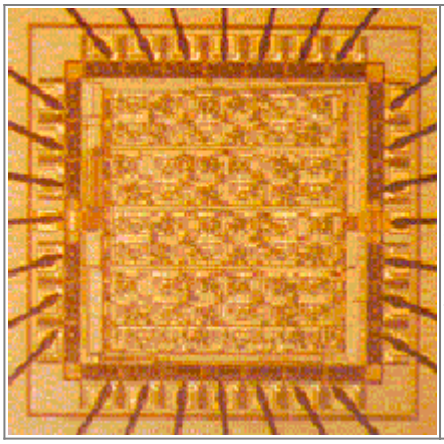
Development of design file format converter using PERL scripts (managed to write a Neural Network MLP-BEP implementation while learning Perl). Feasibility study on RAM generator (generated layout files were also analyzed, but not completed because of the short internship period).

Research Project (1998)

Temperature Dependence Analysis of a Digitally Controlled Oscillator (DCO) using BiCMOS circuits (In comparison with the same design using CMOS circuits. Some theoretical cause and effect were obtained.)

Research Project (1996)

Test & Development of an 8-bit CLA Adder using Novel Dynamic BiCMOS circuits (Transistor level design and simulation. Full-custom layout editing. Fabricated and tested. Photomicrograph of chip's layout are shown below.)

	My firstborn... this is my first chip (I did the design & the layout myself!). It's a working prototype of a novel dynamic 8-bit BiCMOS adder. I produced this during my industrial training. This was 'manually' done - the simulation input is 'handcrafted' netlist file and the layout was done using custom cells (no standard cell libraries!) without any auto-PNR. I also took this picture myself using a camera-fitted microscope (I forgot if that is actually what they call it - it was owned by another department).

Mini Project (1996)

Produced a liquid level control system using 8051 microcontroller.

Mini Project (1994)

Modeled a traffic light controller using an EPROM and a 555 timer.

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