

**Juan Portillo, BSEE, US citizen**

7123 George Burns, San Antonio, TX 78240-2323

Cell: 210-365-1702 Home: 210-680-7407 Email: [jportillo03@hotmail.com](mailto:jportillo03@hotmail.com)

BSEE, May 2003, University of Texas at San Antonio

Undergraduate GPA: cumulative=3.18/4.0; major=3.43/4.0

MSEE, Aug 2005, University of Texas at San Antonio

Graduate GPA: 3.3/4.0

**Skill Summary:**

1. FPGA: Spartan II / IIE, Virtex-II Pro, Xilinx EDK, Xilinx ISE, ModelSim, Memec Insight dev boards w/ P160 expansion module.
2. Matlab, C, PVM, PICBasic, Assembly, Unix, Linux, XWindows, Java, Fortran, OpenGL, C++.
3. RISC computer modeling, VerilogHDL, VLSI, Digital Systems Design I & II, UART programming using TurboC for serial file transfer.
4. PSpice, Circad, Magic, IRSIM, Mentor Graphics Design Architect & QuickSim II.
5. TexasInstrumentsDSP6416, MotorolaHC12, Basic StampII.

**Spring 2005:**

Master Thesis: Fast Implementation of Engine Monitoring Algorithm on ASIC. Work will be completed by Aug. 2005.

DSP Implementation: Implementation and comparison of DSP algorithms on TI DSP6416 processor, versus FPGA.

**Fall 2004:**

Parallel & Distributed Computing: Compared speedup of sorting algorithms of sequential versus parallel machines using PVM.

**Spring 2004:**

Adv Topics: Embedded Sys Design: VirtexII Pro, PowerPC405 core, interface to LCD, user input utilizing interrupts, timer display, and memory file systems, using Xilinx EDK design software. (also done w/ SpartanII/IIE, Microblaze core)

Top in Ctrl Sys: Intro Neural Networks: Studied fundamental algorithms for backpropagation / feedthrough networks w/ Matlab simulations.

Engineering System Programming: Animation of bodies in orbit using OpenGL and C++. Animation of car following an Epi-Spiral path using JAVA.

Coop. Southwest Research Institute Center for Nuclear Waste Regulatory Analyses (NRC):

Assisted performance analysis group in updating and assuring the quality of nuclear waste repository simulator. (Jan-Oct,2004)

**Summer 2003:** Coop. Central Intelligence Agency: Embedded devices design group. PCB layout (CIRCAD / IsoPro). IrDA research. Test, debug, and rebuild digital/analog circuits for embedded applications to verify and/or enhance design. (i.e. Ethernet, voice chips, analog filters, digital gain control, uPC to PC debugger link).

**Spring 2002:** Ford Motor Competition: 1<sup>st</sup> Prize. Presented novel concept to prevent locking keys within a vehicle while automating pre-existing vehicle electronic systems using wireless detection methods.

**Fall 2002:**

VLSI Design: Design of CMOS logic using Magic v7.1. Implementation of Bough-Wooley algorithm for asynchronous 8bit multiplier.

Texas Space Grant Challenge: Image Recognition on Mobile Arm. Team construction of robotic arm with vision using CMOS digital camera, digital image processing and servo motor control routines. Responsible for servo power board design, controller and program interface to servo motors. Used ANSI C, Eyebot Embedded Controller.

**Summer 2002:** Coop, Central Intelligence Agency: Signals forensic analysis. Reconstruction of fax and voice, using Matlab, and other software. Data recovery from legacy storage media.

**June 2001 - June 2002:** Louis Stokes Alliance for Minority Participation Scholarship: Programmed algorithm for maze navigating robot using Basic Stamp II microcontroller, ultrasonic/infrared rangefinders.

**August 2001 - May 2002:** Texas Space Grant Consortium: UTSA Mars Greenhouse Robot Project. Implemented Panasonic Ultrasonic Rangefinders and Sharp Infrared Rangefinders on Basic Stamp II for object avoidance and distance finding.

**June 1998 - August 1998:** High School Summer Research Program at the University of Texas Health Science Center at San Antonio: Histological research and analysis of homogeneous bone protein graft on baboon vertebrae.

**Other:**

1. Deans List: Spring/Summer 2001, Spring 2002, Fall 2005
2. Part of a team that constructed autonomous robot with sonar that navigated a maze for IEEE Region 5 Conference (Colorado Springs, CO 2001-3rd place finish / Houston, TX 2002).

**Professional Memberships:**

1. IEEE: Publicity Chair Fall/Spring 2000, Robot Team Chair 2001-03
2. Mexican American Engineers and Scientists (MAES):