

# Eugenio Diaz, BSEE/BSCE

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**Objective:** Available for a full-time position in any area in the fields of Electrical Engineering and Computer Engineering. Positions related to simulation, augmented/mixed/virtual reality, computer graphics, Internet/Intranet, Technology Evaluation, network design, and electronic design are specially fulfilling to me. Since I have dual engineering bachelors, extremely diversified experience, and strong passion for technology, I can perform very well on different roles or positions, including, but not limited to: Research Engineer, Technology Evaluator, Software Engineer, Project Manager, HW Design Engineer, System/Network Administrator/Architect, etc. Prefer to work in the academic research, hi-tech research, or entertainment sectors.

## Skills/Hands-on:

**Human/Entrepreneurial:** Due to highly diversified experience I can perform very well in teamwork oriented, high creativity, academic, research, field or business environments. Have excellent written and verbal communication skills in both English and Spanish. Have experience in all aspects of a startup company life cycle. Successfully started and ran a product design company based on a single invention. Took it from idea to prototyping to product design and intellectual property protection to manufacturing and international sales/marketing.

**Systems:** have worked, programmed and developed on the following platforms: Sun/Solaris, IBM RS6000/AIX, HP/HP-UX, SGI/IRIX, x86/Linux, Sparc/Linux, PC/Win 3.11-Win10, Amiga/AmigaOS, Android. Have extensive technical experience on hardware (installation, integration, configuration, repair, troubleshooting) and software on the following platforms: SGI/IRIX (Indy, Indigo, O2, Octane, Origin 2xxx, Onyx); Sun/Solaris (Sparc Stations SS4-20, Ultra x, Ultra Exxxx); x86/StrongARM/Sparc Linux (Android, CentOS, Debian, Mandriva, Red Hat).

**Languages:** Have programmed and developed on the following languages: C/C++, JAVA, Python, Shell Scripting, Perl, TCL/Tk, HTML, Fortran, Pascal, Lisp, RDBMS SQL (Oracle, Informix), LDAP, VHDL, PLC Ladder, and many other less known dialects.

**Software Tools/Environments:** Have effectively used the following tools and environments: most Open Source Software, Netscape SuiteSpot; Unix/X11R6 X-Windows; Kdevelop; Eclipse; XILINX/Viewlogic VHDL/FPGA Design and Simulation CAE tools; MathCad; LabView; Matlab; SciLab; Autodesk Suite; AutoCAD; Inventor; Solid Works; ProE/Wildfire; Maya; OpenOffice; MS Word, MS Excel, MS Access, MS Power Point; Photoshop; Alias Wavefront/Composer; LightWave; PovRay; Render Man; CATI's X-IG Image Generator; KMW BatSim/IMI/MilCIG; Micron RFID MicroStamp technology; custom Finite Element Analysis (FEA), Statistical Process Control, and Digital Signal Processing Tools; and many other less known tools in the areas of CAD, CAE, DSP, 3D Rendering/Ray Tracing and Computer Graphics.

**Networking:** Have designed and implemented networks using the following protocols, topologies and technologies: FDDI; 100BaseTX, 100BaseFX, 10BaseT and 10Base2 Ethernet; Slip/PPP; ARCNET; Token Ring; 56k, ISDN, T1, Frame Relay, and ATM circuits; TCP/IP; Samba SMB; NetBEUI; NFS; FTP; HTTP; HTTPS; SNMP; SMTP; LDAP; DIS; HLA; VMF; MILES; Ascend, Atheros, Broadcom, Brocade, Cisco, Extreme Networks, f5, Juniper Networks, Bay Networks, Netgear, and ADC/Kentrox networking infrastructure.

**Industrial:** Have worked hands-on with many industrial machinery like, drills, lathes, milling, punch press, AC/DC/gas welding, polishing equipment, woodworking machinery, etc. Have worked and programmed with industrial equipment like: Allen Bradley, Siemens, DirectPLC PLCs. Have training on Good Manufacturing Practices (GMP), OSHA, Statistical Process Control (SPC), Computer Integrated Manufacturing (CIM), pharmaceutical manufacturing processes. Have experience on project management, budget management, applied engineering economics, project feasibility study/justification, process validation and validation protocol writing.

## Work Experience

Jul 20 – Present	<p><b>Systems Engineer:</b> Work in the engineering department designing products for the aerospace industry; more specifically, ground operations equipment for the various domestic and international fighter programs. Work with large aerospace contractors to spearhead IRAD initiatives for new products and program improvements that require intense and fast execution. Day to day consists of solving complex and unique hardware and software problems. Work the full product development life cycle from concept to production. Buildup of engineering prototypes, testing, certification, etc. Work with production and sustainment departments to establish production and sustainment processes for new products within the AS9100D standards. Had key participation in the design, development, and prototype production of the new computing hardware platform (ODIN), for the F-35 ground operations system (ALIS); virtualized a full rack of servers into a single 2U high density node, while dramatically increasing performance.</p>	ITI Engineering, LLC Orlando, FL
Mar 16 – Present	<p><b>Inventor, CEO and Co-founder:</b> Successfully started and ran a company from conceptual idea to international sales. After inventing a tool to remove broken headphone plugs from any device, took it through all stages of a startup, and into a successful company. As the only full-time employee and co-owner, handled all functions within the company from engineering functions like R&amp;D, product design, patent application, CAD/CAM, prototyping, and manufacturing; to all corporate functions like incorporation, accounting, and infrastructure; as well as operational functions like international marketing, sales, distribution, and shipping, customer service, CRM, etc.</p>	Nightek Orlando, FL
Oct 18 – Jul 20	<p><b>Integration and Test Engineer:</b> Senior Integration engineer on the Integrated Live-Virtual-Constructive Test Environment or ILTE program of the CPM/Next CTIA product line at General Dynamics Mission Systems. Duties consist of the integration and testing of a services-oriented architecture software stack based on Angular/Java/JBOSS into a VMWare based portable hardware stack, consisting of firewall, network switch, NAS, time server, CPU/SSD server, radio systems, LTE Android Phones, and notebook workstations. Support integration into Windows Server 2016 and RHEL Linux VMs (OneSAF and ExCIS constructive simulators), and End-to-End testing of the systems of systems. DevOps support to software engineers, debugging of code artifacts, and architectural input to engineering management.</p>	Athena Technologies, LLC (Sub at General Dynamics Mission Systems) Orlando, Florida
Nov 01 – Mar 16	<p><b>Associate in Simulation / Senior Research Engineer:</b> Worked as Senior Research Engineer on embedded training technologies at the Army Research Lab (ARL) Simulation Training and Technology Center (STTC). Responsible for the integration, maintenance, and operation of technology demonstration testbeds in the STTC's Dismounted Soldier Lab. In this lab we concentrated on technologies for locomotion, tracking, and augmented reality; as such I had to integrate and maintain cutting edge research systems from companies like SRI, Intelligent Decisions, Conflict Kinetics, Organic Motion, Quantum3D, Research Network Inc, among others. Designed and built a hardware platform to measure the total and partial system latency of the DSTS wearable VR system, and successfully characterized the latency of the stock configuration with IMU sensors and VBS2 environment, as well as additional configurations like Unity3D with standard input device. Worked as the senior design/hardware engineer; this involved doing the mechanical and electrical design, CAD/CAM modeling and analysis, project management, fabrication, etc, of custom infrastructure in support of specific research initiatives and/or experiments. I have designed and built five embedded training simulation testbeds, most of them in support of the now defunct future combat system (FCS): a one seat command and control vehicle (C2V), a two-seat infantry carrier vehicle (ICV), a two-seat common gunnery architecture (CGA), a two-seat embedded mission rehearsal (eMR) and a one seat switchable vision block demonstrator (VBD). Over the years these</p>	Institute for Simulation and Training University of Central Florida Orlando, Florida

	<p>testbeds have been repurposed and reused into several different configurations and have been integrated with multiple vendor systems into distributed simulation experiments and demonstration using DIS and HLA protocols. Have created from scratch several applications to control DIS and HLA simulation network traffic; and have also designed and built embedded hardware dedicated to this purpose. Most of these testbeds required multi-monitor touchscreen displays. Not happy with the commercially available touch screen monitors, and in order to streamline the look of the displays, I designed and built two different custom touchscreen monitors that minimized the bezel size and mounting depth; with the latest design I built seven 17-inch units for a 3x2 display matrix plus spare. On a different project, I designed and built the mounts to attach cameras and computer systems to a Foster-Miller TALON robotic platform in support of a 3D stereoscopic remote driving experiment. For another stereoscopic driving experiment, I designed and built a custom adjustable mount system to attach six head tracking cameras to the cabin of a mine resistant ambush protected (MRAP) motion platform simulator; two special requirements where to have a very rigid structure to minimize inter-camera displacements, and a bolt-less design since the simulator cabin could not be modified.</p> <p>Worked as the senior systems engineer; this mostly involved the design and implementation of complicated network infrastructure, custom operating system level software and scripting solutions to odd and unique requirements presented by research initiatives and/or experiments. As part of this role, I developed a custom scripting environment for remote simulation control. This software allows us to define a group of front-end/back-end processes assigned to a group of systems, as a single simulation unit that can be controlled remotely from any system on the network. This simulation control environment has been very helpful in aiding with the integration of external research projects into our existing simulation testbeds. Also work as the group's network administrator. Over the years, I have developed and maintained a complex network supporting around 15 researchers, in a mixed environment, with a fully automated network wide backup system. This network is divided into separate subnets for each lab and simulator testbed, interconnected by a custom router and routing software environment designed to control the flow of simulation traffic (DIS/HLA) between subnets. Other daily duties include setup, maintenance, and integration of system software, software builds, and configuration management environments; troubleshooting of odd hardware/software issues in support of research experiments; evaluation and research of state-of-the-art graphics and simulation technologies as it applies to the Army's research initiatives. In our latest projects we have concentrated on research of embedded training on mobile platforms, and to this end we keep a testbed with a multitude of mobile devices like the latest Android phones and tablets, and Apple iOS devices like iPod touch and iPad.</p>	
Jun 01 – Nov 01	<p><b>Assistant in Simulation / Software Engineer:</b> Worked on the integration of robotic entities to Semi-Automated Forces (OTBSAF and FCS) simulation environments, as part of the Composable Behavioral Technologies (CBT) project funded by STRICOM. Created C++/CORBA code to interface the Real-World Robotics (RWI) ATRVMini robot to the Future Combat System OCU/SAF.</p>	<p>Institute for Simulation and Training University of Central Florida Orlando, Florida</p>
May 00 - Jun 01	<p><b>Systems Engineer (Contract):</b> Worked on the creation and administration of a highly available distributed server platform, based on Linux, capable of hosting multiple customers using the database driven TECS E-Commerce software developed by Web-Insights.net. Helped with the development and troubleshooting of the TECS software. Duties included the administration of all Internet services like, DNS, NTP, FTP, sendmail, Pop3, SSH, SSL, virtual web serving, network accounting, backup, etc. Developed shell script based in-house solutions for the network bandwidth accounting, backups, web server monitoring, and performance statistics.</p>	<p>Web-Insights.net Orlando, Florida</p>

Feb 00 - May 00	<p><b>Senior Systems Engineer:</b> Worked on the upgrade and maintenance of the network infrastructure of the Internet start-up Invent.com. Set-up and maintain security and homogeneity standards among all servers. Looked over the administration of about 10 Linux servers and 5 Windows workstations. Implemented a new backup power infrastructure. Proposed recommendations for future server room physical plant upgrades. Implemented a secure and distributed network wide backup infrastructure. Helped external website developers with the design and troubleshooting of new websites. Duties included the administration of all Internet services like, DNS, NTP, FTP, sendmail, SSH, web serving, network accounting, backup, etc.</p>	Invent.com Orlando, Florida
Aug 99 - Feb 00	Time off to get married and enjoy life.	Caribbean Cruise ;-)
Sep 98 - Aug 99	<p><b>Senior Systems Engineer:</b> Worked on different aspects of the CargoTag start-up project which consists of an airline asset tracking and management data-warehouse system using Micron MicroStamp RFID technology, SQL database, and Web technologies. Helped design the Internet architecture necessary to collect data from various Worldwide customer locations into our data-warehouse and provide a secure web interface to reports and customer accessible data, using a public key certificate infrastructure. Researched for design alternatives on various aspects of the system, including but not limited to, software and networking architectures, electrical and mechanical characteristics, feature feasibility, and product specifications. Wrote and/or maintained several technical documents like the product specifications, software specifications, architecture diagrams.</p> <p>Worked as general Unix systems support and network consultant whenever necessary. Provided extensive support in the diagnosis, troubleshooting, and correction of Unix and network problems, in a large security and access control project for a big financial firm. Provided QA assurance consultation to project management on the custom security management application being developed by a third party, running on HP-UX in a distributed multi-server architecture.</p> <p>Also performed a dual role as a Network/System Administrator in a small office environment consisting of one NT 4.0 File Server, one Linux Samba Print Server, over 25 Windows 95 desktops and notebooks, 2 Sun SS20 workstations running Red Hat Linux, and one T1 Wan circuit using a Cisco 2600 series router and Cisco 124 FastHubs.</p>	Lockheed Martin Corp. IMS - ESS Division Orlando, Florida
Jun 98 - Sep 98	<p><b>Systems Engineer (Contract):</b> Build and integrate existing hardware/software, under severe budget constraints, into an island wide ISP infrastructure; taking maximal use of existing assets and quality of service as primary goals. The network architecture consisted of multiple incoming T1 circuits routed into several Ascend MAX terminal servers with K56/V.90 modem cards, a dedicated outgoing T1 circuit to the Internet and a 128Kbps ISDN backup circuit, and a switched Fast Ethernet internal network. The server architecture consisted of a main server and several secondary servers. The main server was a SGI/IRIX server with Netscape SuiteSpot 3.5 running web, mail, news, proxy and LDAP directory services, plus Bind running the primary DNS server. The secondary servers consisted of PC (x86) and RISC (Cobalt RaQ micro-server) based Linux servers and micro-servers providing secondary DNS, RADIUS authentication, FTP, backup mail, and dedicated customer web hosting. Implemented a Linux based transparent proxy, masquerading firewall, for internal company use. After the design, integration/installation, and configuration of the whole infrastructure, performed as the Systems Administrator and consultant for a period of two months. During that period, I started the design and installation of a Java based integrated ISP accounting and administration system consisting of the HurlNET ISPAdmin and ISPReg software, MySQL Database, Netscape LDAP Directory Server, RADIUS servers, and a secure web server for over the net credit card applications.</p>	CRC Networks and Cables, Inc. Bayamon, Puerto Rico
May 97 -	<b>Senior Systems Engineer:</b> Was engineer #2 on a six-employee startup,	Quantum Business

Jun 98	<p>where engineer #1 was one of the owners. Performed several engineering roles due to the small size of the company. The company provides hi-tech computing solutions to the enterprise, academic, scientific research, graphics arts, Internet, entertainment, and telecommunications markets. The core products sold at QBE were Systems Integration and Consulting services; the full line of Sun Microsystems and Silicon Graphics hardware/software/service/support products; Netscape full suite of client-server software; SGI Alias/Wavefront high-end graphics software; Gauntlet Firewalls; MSI molecular simulation software; Oracle, Informix, and Sybase database environments among other solutions. Functional roles included: pre-sales engineer; on-site software and hardware support engineer; and integration engineer/project manager.</p> <p>As a pre-sales engineer, my duties consisted of: the design of systems hardware and software configuration to meet or exceed customer needs at an specified budget range (usually between \$5K and \$250K); the design of high-end presentations and demos to show-off the capabilities, features, and superiority of our computing solutions and products (this usually consisted of setting-up temporary Unix network environments in a showroom floor, with web servers, streaming media, 3D graphics, remote management, etc.); and helping the sales staff with technical questions, new technological advancements, etc.</p> <p>As a support engineer my duties consisted of: 24x7, 4 hour response on-site, phone, and remote hardware and software support; general Unix OS and application support; periodic remote systems/network monitoring and performance profiling; onsite preventive maintenance, and repair/replacement of hardware to the FRU (field replaceable unit) level; periodic patch installation and upgrades on production systems; provided technical support to the vendors we were dealer of, in trade shows and large training sessions; due to the high-end/low volume nature of the equipment sold, it often (very often) required troubleshooting of odd technical problems involving drivers, kernel tuning, or hardware testing, and always resulting in either the installation of an existing patch or a bug report to the manufacturer for the creation of one (most situations required coordination between the system manufacturer and a third party hardware or software provider, in order to solve the problem).</p> <p>As an integration engineer/project manager my duties consisted of: the installation, testing, and release into production, of the systems designed as a pre-sales engineer; systems usually consisted of an Intranet or Internet/ISP solutions using high-end servers and Netscape SuiteSpot server side software which typically involved installing and integrating http/https, mail, ftp, proxy, news, certificate, catalog, DNS, and NIS services, plus a firewall running on a hardened Unix kernel (there was a great deal of Netscape software customization in these projects); installed several Sun E450s and E3000s, and SGI Origin 200 with software/hardware raid configurations using Sun's Online Disk Suite/Sun Storage Array and SGI Plexing/Volume Management software; installed several SGI O2 and Octane workstations with Alias/WaveFront's Power Animator, Maya, Composer, and Adobe Photoshop and Premiere.</p>	Engineering Hato Rey, Puerto Rico
May 96 - May 97	<p><b>Systems Engineer / Owner:</b> Started a home-based Internet company. Used a dedicated 56Kbps Internet circuit, Linux servers running DNS, mail, ftp, web services. Used Apache, Unix shell scripts, and a custom search and database engine written in C to provide a unique web-based business portal and directory for the Island corporations. Played with lots of newly developed Internet technologies and concepts, searching for a marketable product or business model; but ultimately failed due to the high cost of a dedicated Internet connection, and the lack of capital funding.</p>	Softengine Technologies Las Piedras, Puerto Rico
May 92 - Dec 92	<p><b>System Analyst:</b> Had full responsibility for plant-wide projects. Had similar responsibilities and duties as in the project engineering department, but this time within the IT department. Worked on the development of an enterprise wide CIM Initiative. Worked on the maintenance of network and telephone circuits. Duties: design, integration and deployment of new information technologies.</p>	Information Technologies Johnson & Johnson Mfg. Corp. McNeil Consumer Products Las Piedras, Puerto Rico

Dec 91 - May 92	<b>Project Engineer:</b> Had full responsibility for plant-wide projects. Duties: cost analysis; feasibility studies; system design; material/equipment/contract service specification and approval. Worked as project manager for several production machines upgrades like granulators, nozzle washing stations, tablet compressors, etc. Wrote and executed qualification/validations protocols and wrote and/or maintained official SOP manuals. Actively participated in the brainstorming weekly sessions of the project engineering department, to determine priorities, scheduling and status of projects, and to discuss existing problems that would open opportunities for new projects.	Engineering Department Johnson & Johnson Mfg. Corp. McNeil Consumer Products Las Piedras, Puerto Rico
Jan 90 - Aug 90	<b>Programmer:</b> designed and programmed a GUI (graphical user interface), to generate the parameters input file to an existing structural analysis program, and to graphically visualize the output of the simulation.	Dept. Civil Engineering University of Puerto Rico Mayagüez, Puerto Rico

<b>Education</b>		
Aug 88 - May 96	<b>BSEE</b> <i>Majors:</i> Electronics <i>Minors:</i> Mathematics, Economy	Design University of Puerto Rico Mayagüez Campus Mayagüez, Puerto Rico
Aug 88 - May 96	<b>BSCE</b> <i>Majors:</i> Hardware <i>Minors:</i> Mathematics, Economy	Design University of Puerto Rico Mayagüez Campus Mayagüez, Puerto Rico