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Luke Dupin

SKILLS:

- **Operating systems**: Ubuntu and Redhat Linux, Solaris 8, Windows, and MacOSX.
- **Embedded**: ARM7 TDMI, Cortex-M3, NetOS 7.1, and USB Host and Device.
- **Programming languages**: Action Script 3.0, Bash, C, C++, C#, CSS, HTML, Java, Javascript, MXML, PHP, Perl, Python, Qbasic, Ruby, SQL, VB, Verilog, VHDL, and Yacc/Bison.
- **Databases**: *LDAP, MySQL 5.1, Oracle 8, and Postgresql 8.4.
- **Frameworks and APIs**: Adobe Flex 2.0, Ajax, *DirectX, OpenGL, QT 4.5, Ruby on Rails 2.x, Java Swing, jQuery, Prototype/Scriptalicous, and Win32 API.
- **Software tools**: Altium, Code Sourcery, Gimp, MS Office, MySQL Workbench, Open Office 3.x, and Visio.
- **Administration tools**: Apache, IP Cop , MySql, OpenSSH, Samba, and SendMail.
- **Revision control**: CVS, Git, and SVN.
- **Data communication protocols**: AWS, CSV, JSON, SOAP and XML.

EXPERIENCE:

CTO, First Record Carbon, LLC **July 2008 – Present**
Carbon Offset Monitoring, Bend Oregon

- Designed and implemented carbon offset monitoring data infrastructure.
- Designed and implemented an infield software monitoring solution.
- Designed and implemented a server-side carbon metrics monitoring engine (Patent Pending).
- Built a PDF based carbon reporting system.
- Built a dynamic content and skinning engine for seamless client embedding.
- Built a dynamically generated kiosk engine using OpenFlash chart and Json.

ARM Cortex-M3, XIM3 **January 2010 – April 2010**
High Desert Design Center Inc., Bend Oregon

- Designed and implemented interrupt driven USB I/O subsystem to intercept inputs from Xbox360 controller, and overwrite with inputs from high-precision gaming controllers**.**
- Designed and implemented Host Stack on Maxim MAX3421E and Device stack on the LPC1758.
- Designed and implemented an LCD driver for a 18bit 320x240 color display.

Quad-rotor, autonomous flying vehicle August 2009 – Present
Dupsoft, LLC, Bend Oregon

- Designing and implementing an electrically power, quad-rotor flying vehicle using: A Defcon 17 badge (Freescale MC56), Nintendo Wiimote, and a G1 phone running Debian Linux.
- Working with an electrical and mechanical engineer to create the electrical system and the physical design of the craft.
- Designing and implementing a flight control system to maintain level flight without any human interaction.
- Designed and implemented a GPS way-point tracking system to conducted unmanned flights.

Defcon badge competition, JM60 and MC56 August 2008 – Present
Dupsoft, LLC, Bend Oregon

- Designed and implemented a battery powered HTTP 1.1 compatible web-server with: a Freescale JM60 (Defcon 16 badge), SD memory card, and a UART to Ethernet converter.
- Designed and implemented an autonomous, IR tracking robot using MC56 in 3 days, using: two IR sensors, 2 ADC, PWM motor drive control, and a Feescale MC56 (Defcon 17 badge).
- Designed and implemented interrupt based system for overwriting Xbox360 controller messages with Mouse and Keyboard inputs.

Web 2.0, Ruby on Rails, March 2008 – June 2008
The Bend Bulletin, Bend Oregon

- Designed and implemented a threaded commenting engine.
- Designed and implemented a news article tracking system to produce dynamic RSS feeds.
- Designed and implemented a message queuing administration portal.
- Designed and implemented a JSON based AJAX control system to by pass S.O.P. and embed the comment engine on any remote server.

Embedded Firmware, Data Com. Architect March 2005 – March 2008
PV Powered Inc., Solar Inverter Manufacturer, Bend Oregon

- Designed cost effective and simple to install solar monitoring hardware for PV Powered Inverters.
- Designed and implemented embedded firmware for the inverter monitoring hardware.
- Designed a manufacturing test bed and programming station for the inverter monitoring hardware.
- Designed a cluster ready data storage system that supports 60,000+ monitoring devices using JMS and a clustered MySQL database.
- Designed and implemented an inverter fault tracking system used for customer service support and engineering in-field beta testing. The fault data provided key information, leading to the industry's lowest inverter failure rate of 0.1%.

GPS Navigation System Designer, December 2007 – December 2008
Aero Space Lunar Lander XPrize Team, Moscow Idaho

- Designed and implemented GPS fault tolerant navigational system.
- Designed way point tracking system.
- Networking communication system.

Algorithm Specialist, February 2004 – February 2005
Amplicon Express, Gene Sequencing Company, Pullman Washington

- Designed a recursive search algorithm to produce reaction statistics, thus acting as a genetic sequencing search engine.
- Online interface to register calculations through a scheduling system.
- Created particle swarm algorithm to generate distribution matrices based on predefined sequence parameters which created more accurate search results.

Systems Administrator, January 2002 – March 2005
University of Idaho, I.B.E.S.T., Moscow Idaho

- Created an online user management system to work with 250+ users, across 4 different operating systems, onto an Oracle Database, using LDAP authentication. The system also tracks user time of usage, program usage and process run times to generate required statistics needed for the C.O.B.R.A. grant yearly renewal.
- Created temperature and processor usage monitoring system, that interactively scheduled processes, shut down overheating compute nodes, and display operational statistics online.
- Managed 128+ node Beowulf compute center.

EDUCATION: **Bachelor of Science in Computer Science, December 2006**
University of Idaho, Moscow Idaho

ACTIVITIES:

- Defcon Security Conference, Las Vegas, NV
- ToorCamp Security Conference, Moses Lake, WA
- University of Idaho Submission Fighting Club, 2004 – 2006
- University of Idaho Motocross Club, 2001 – 2006
- Snowboarding, Wake boarding
- Motocross Racing (1994 - 2007)
- Chess and other logic games