Micah Dowty

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Experience:
- Languages: C, C++, Python, Perl, assembly (x86/PIC), XML, XSLT, SQL, Verilog
- Developing and managing medium to large (150,000 lines of code) projects
- 3D and 2D graphics programming (low-level, GTK+, SDL, OpenGL)
- Embedded systems design and development, hardware/software integration
- Parser, compiler, and language development
- Low-level programming: video drivers, microcontroller firmware, bootloaders
- Digital design and implementation in FPGAs
- USB, I^2C, SPI, 1-wire, RS-232, RS-422, and RS-485 interfaces
- Linux kernel module development
- Web design/development with XHTML, CSS2, Javascript, XML, SQL, Apache, CGI, Twisted, mod_python

Current Projects:
- CIA, a system for tracking open source development (commit messages, bugs, etc) in real-time over the web, IRC, or XML-RPC (http://cia.navi.cx)
- An algorithm for interactive rendering of chaotic maps, (http://fyre.navi.cx) won the ACM regional Student Research Competition at SIGGRAPH 2004.
- Several small embedded systems, including electric field sensors and infrared devices
- A set-top-box system consisting of Python modules and multiple small USB peripherals

Work Experience:
- Colorado Space Grant Consortium (May 2003 - present)
  - Command and Data Handling lead for the Citizen Explorer 1 satellite
  - Software team member for the CX and DINO satellites
  - Hardware design and implementation for several critical microcontroller systems including command routing, wireless data logging, modem controllers
  - Design and implementation of flight and ground software
  - Developing hardware and software for automated and semi-automated testing
- PicoGUI-related consulting jobs:
  - Smartdata, developing PDA and set-top box devices
  - Exadigm, developing hand held credit card processing units
  - RidgeRun, developing a Linux-based OS for cellular phones

Past Projects:
- Creator and lead developer of PicoGUI, a new open source Graphical User Interface system with a unique architecture (http://picogui.org)
- "Space Invaders" clone implemented entirely in hardware, using a Xilinx FPGA
- USB-attached LED matrix controllers, electrically and mechanically scanned
- Educational software for elementary school students
- Hardware, firmware, and Linux kernel module development for USB devices
- 3D engine with on a new continuous level of detail algorithm and copy-on-write database

Education:
- Graduating May 2005 with a BS in Computer Science from the University of Colorado at Boulder
- Several Electrical Engineering courses at the same university
- Graduated from the International Baccalaureate program at Douglas County High School