PRAJNA KANDARPA

226-606-3566
spspkand@uwaterloo.ca
41 Pineslope Cres, Toronto,ON M1E 4M5

4A MECHATRONICS

20402024
github.com/prajnak
prajis.me

PROFILE

I like hacking on both software and hardware. I am a hobbyist programmer and have experience in Python, Java, C and Javascript. I've done front-end and server-side/backend development, PCB bring-up and verification, mechatronic control design and sensor interfacing. I love working in small teams and am driven by my interest in the fields of robotics, cryptography, distributed systems and data analytics.

TECHNICAL SKILLS

LANGUAGES	**C, Java, Python, Javascript, Perl, MATLAB**
TOOLS	**Vim, Git, Arduino, Eclipse, Subversion, Tomcat, GDB, Jira**
FRAMEWORKS	**Django, AngularJS, NodeJS, Grails (JVM)**
DESIGN & MARKUP	**HTML, CSS, Markdown, Adobe Photoshop**
3D MODELLING	**AutoCAD, Solidworks, Unigraphics NX**

EXPERIENCE

Diagnostics Engineer, Arista Networks, Santa Clara, CA — May - Dec 2014

Assisted the hardware team in developing software based automation of PCB verification and manufacturing test verification as part of the Diagnostics team. Used standard system communication protocols like SMBus, I2C and JTAG to facilitate communication between components on the PCB. Added features to the manufacturing test automation infrastructure, written using Python Django.

Software Developer, Trapeze Group, Mississauga — Sept - Dec 2013

Worked on multiple web applications that co-relate product development history with code repository statistics. Used Subversion Java API, Java Servlets and the Grails application framework. Improved page load times, database performance and cleaned up internal APIs.

Web Platform Engineering, Morgan Stanley Financial Services, Montreal — Jan - Apr 2013

Developed document lifecycle workflows for TWiki, a wiki application used as a knowledge base. Gained in-depth knowledge of wiki applications' network configuration, load balancing techniques and site mirroring. Wrote plugins in Perl to implement Document Review workflows based on LDAP User, Group ACLs. Collaborated with team members from New York, Shanghai and Tokyo during an iterative design process.

Software Development Intern, Safran Electronics Canada — May - Aug 2012

Designed an automated coding standard analysis process using Python and AutoIT in a Windows environment. Implemented GUI automation for a static code analysis tool QA-C using AutoIT. Reverse engineered configuration files for QA-C and generated them using Python. Created python scripts that analyze source code for coding guideline deviations.

Software Developer, Pythian Group, Ottawa — Sep - Dec 2011

Developed software using C, Perl and MySQL in a Linux environment. Extensively used C MySQL API and Perl:DBD module in development. Monitored production server stats for irregularities using Nagios.

PROJECTS

UW Mars Rover Team

Design the control systems for an autonomous robot manipulator arm. Arduino microprocessors were used for sensor interfacing.

Autonomous Speed Boat

In this group project, our team is building an autonomous miniature speedboat controlled using an Arduino board. The boat uses infrared sensors for path detection and feedback control. The hull is 3-d printed with fibreglass epoxy coating to counteract the porous 3d printing material. Responsible for runtime software and control system implementation.

EDUCATION

University of Waterloo, Waterloo, ON — Honours Mechatronics Engineering (Class of 2016)

RELEVANT COURSES

Control Systems: Analyze and model first and second order mechanical, electric and fluid systems to get a desired output response using PID controllers

Computer Structures and Real Time Systems: Develop system functions for a real time operating system

Sensors and Instrumentation: Design and build signal conditioning circuits for robot sensors and actuators

Microprocessor Systems: Use the Altera Quartus 2 to design a custom 32 bit microprocessor system, implement using PLC on Altera DE2 dev board and write software for this using Nios 2

Actuators and Power Electronics: Build AC Power circuits, Single Phase Transformers, DC Motors and speed control of DC Motors