

## Marco Yuen

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## Experience

**Associate Profession Specialist, Planet-Lab, Princeton, NJ** *November 2010 – Present*

Develop and maintain software for the [VICCI](#) project and [PlanetLab](#) project. Deploying clusters to multiple sites, and occasionally, providing support when the cluster is down (e.g. configuring switches). I am working on the managing layer that deals with managing lifecycles of the VMs and physical nodes, as well as their networking configurations. Also, contributing ideas to the VICCI projects.

**Contractor, Hewlett-Packard Labs, Palo Alto, CA** *November 2009 – Present*

Working on the GENICloud project, a joint project between HP Labs, Planet Works (Princeton University), and University of Victoria. GENICloud is also the work of my master's thesis. The project's goal is to federate private/public clouds with [GENI](#)<sup>1</sup>, a global scale network testbed.

**Contractor, MDA Corporation, Richmond, BC** *September 2009 – November 2009*

Responsible for writing a communication layer using JNI between a library written in C and a system written in Java.

**Teaching Assistance, University of Victoria, Victoria, BC** *September 2008 – May 2009*

A teaching assistance in the Department of Computer Science at University of Victoria. I taught two first-year computer science classes.

**Casual Hourly Employee, Princeton University, Princeton, NJ** *April 2008 – September 2008*

An employee in the Department of Computer Science at Princeton University. I conducted research in the field of programming language and compiler construction.

**Software Developer, AlarmPoint Systems Inc., Victoria, BC** *January 2007 – September 2007*

Worked as a software developer. I was part of a team that developed an enterprise event notification system.

**Casual Hourly Employee, Princeton University, Princeton, NJ** *August 2005 – August 2006*

An employee in the Department of Computer Science at Princeton University. I developed an integration layer between clusters and PlanetLab. During the period, I become very knowledgeable about the inner working of PlanetLab including its infrastructure and API.

**Research Intern, Princeton University, Princeton, NJ** *June 2005 – August 2005*

An internship in the Department of Computer Science at Princeton University. I developed a compiler that supports aspect-oriented programming paradigm in C.

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<sup>1</sup><http://www.geni.net>

**Research Assistance, Dept. of Physics, Victoria, BC**

*September 2004 – December 2004*

Worked as a research assistance in the Department of Physics at University of Victoria. My job involves developing a monitoring framework to monitor different clusters in various geographically distributed sites.

## Skills

**Distributed Systems:** Cloud Computing, PlanetLab, EmuLab, GENI, Computational Grid (Grid X1), Apple's XGrid,

**Cloud Systems:** Amazon EC2, Eucalyptus, OpenStack

**Languages:** C/C++, Objective C, Scala, Java, Python, Ruby, Bash

**Languages:** Bash, Clojure, Objective C, Python, Java, Scala, Ruby

**Operating Systems:** Linux, Mac OS X, FreeBSD, Windows

**Programming Paradigms:** Object-Oriented Programming, Functional Programming, Aspect-Oriented Programming

**Web Services:** Servlet, SOAP, REST, XMLRPC

**Software Engineering Tools:** Git, Subversion, Jira, Trac

## Projects

**GitHub Profile** – <http://github.com/marcoy/>

Various open-source projects can be viewed on my github profile.

### PL-Rocks

An integration layer between PlanetLab and Rocks clusters. The layer allows idle Rocks cluster's nodes can dynamically become PlanetLab's nodes.

### Satyrs

A music features extraction application using Apple's XGrid and Marsyas.

### Distributed Hash Table

A directed study project where I implemented a version of the Chord distributed hash table. It was subsequently tested on PlanetLab, an open global scale test bed.

**CrossCutting C Compiler (C4)** – <http://c4.cs.princeton.edu>

A source-to-source compiler that enables the use of aspect oriented programming constructs in C programs.

**C4 Utilities** – Various utilities for the CrossCutting C Compiler (C4) that I developed. It includes patch and scripts that allow automated compilation of the Linux Kernel, as well as other applications using C4.

### CPP Analysis

A C parser that can parse C preprocessor macros. I extended an existing C grammar to enable the parsing of C preprocessor macros and facilitate the analysis of C macros.

**eXTensible C (XTC)** – <http://www.cs.nyu.edu/rgrimm/xtc>

I filed a bug reports and contributed a patches to the project. C4 is written using this compiler framework.

## Education

### Graduate School

University of Victoria, Victoria, BC – Master of Science in Computer Science. January, 2008 - July, 2010  
Master's Thesis: GENI in the Cloud - [http://s3.amazonaws.com/marcoy\\_thesis/Thesis.pdf](http://s3.amazonaws.com/marcoy_thesis/Thesis.pdf)

### Post Secondary School

University of Victoria, Victoria, BC – Bachelor of Science in Computer Science. Graduated with Distinction.  
December, 2006

### Secondary School

R.C. Palmer Secondary School, Richmond, BC. Graduated in 2001.

## Award

The winner of Undergraduate Student Research Awards in University of Victoria.

## Publications

- [1] **Marco Yuen**. GENI in the cloud. Master's thesis, University of Victoria, 2010.
- [2] Laurent Burgy, Marc E. Fiuczynski, **Marco Yuen**, and Robert Grimm. On reconciling patches and aspects. In *ACP4IS '09: Proceedings of the 8th workshop on Aspects, components, and patterns for infrastructure software*, pages 1–6, New York, NY, USA, 2009. ACM.
- [3] A. Agarwal, M. Ahmed, A. Berman, B. L. Caron, A. Charbonneau, D. Deatrich, R. Desmarais, A. Dimopoulos, I. Gable, L. S. Groer, R. Haria, R. Impey, L. Klektau, C. Lindsay, G. Mateescu, Q. Matthews, A. Norton, W. Podaima, D. Quesnel, R. Simmonds, R. J. Sobie, B. St. Arnaud, C. Usher, D. C. Vanderster, M. Vetterli, R. Walker, and **M. Yuen**. GridX1: A canadian computational grid. *Future Gener. Comput. Syst.*, 23(5):680–687, 2007.
- [4] Stuart Bray, **Marco Yuen**, Yvonne Coady, and Marc E. Fiuczynski. Managing variability in systems: Oh what a tangled OS we weave. 2004.
- [5] **Marco Yuen**, Marc E. Fiuczynski, Robert Grimm, Yvonne Coady, and David Walker. Making extensibility of system software practical with the C4 toolkit. In *In AOSD Workshop on Software Engineering Properties of Languages and Aspect Technologies*, 2006.