

# Curriculum Vitae

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## Employment History

### **Red Hat, Inc. - Community engineer and Education liason (2009 - present)**

Red Hat is an open source enterprise software company. <http://redhat.com>

- Part of the Community Architecture team at Red Hat, responsible for education strategy and outreach within the company. I have chosen to focus our education strategy on postsecondary education in technology and technology-related fields.
- Inaugural director of the Professors' Open Source Summer Experience (POSSE) program, a one-week workshop for professors looking to get their students involved as contributors in open source communities. Since July 2009, 5 POSSEs have been held on 3 continents, with more slated for the 2010-2011 school year. Responsibilities include leading the POSSE curriculum redesign effort to make the program scaleable for summer 2011, training future POSSE instructors, and managing a \$32k annual budget for the program.
- 2010-2011 administrator of the Fedora Scholarship; transitioned the scholarship from an internal Red Hat program to one run by the undergraduates who were past scholarship recipients.
- Profiled in Linux Pro Magazine: <http://www.linuxpromagazine.com/Online/Blogs/ROSE-Blog-Rikki-s-Open-Source-Exchange/ROSE-Blog-Interviews-Red-Hat-s-Mel-Chua>
- Frequent visitor and speaker at the campuses of our university collaborators. One such visit was profiled in <http://opensource.com/education/10/11/professors-perspective-landscape-academic-participation-open-source-projects>.

## **Fedora Project - Volunteer (2009 - present)**

The Fedora Project is a community devoted to the rapid advancement of free and open source software (FOSS) and content. Every 6 months, we release an operating system consisting entirely of FOSS and bring it to hundreds of international events and conferences to teach people how to use Fedora as well as how to help participate in creating the technologies showcased in it. <http://fedoraproject.org>

- Fedora Marketing team lead for Fedora releases 12-13. Fedora 12 marked the first time the Marketing team (a volunteer team with \$0 budget) hit every deliverable on time.
- Organized and ran our first internal marketing event, a Fedora Activity Day (hackathon) that included participants from 3 out of Fedora's 4 geos - Latin America, North America, Europe/Middle East/Africa - and remote participation from the 4th (Asia-Pacific) - to work on Fedora's marketing strategy.
- Since open marketing is a new concept, I brought journalists and PR experts in to teach online classes to the team on their field of expertise; the Fedora Marketing team is now being asked to teach other projects about our practices, and other open source projects have begun to imitate our deliverables (using the instructions we wrote to encourage others to do exactly that). We are running a birds of a feather session on marketing at OSCON, the world's largest open source conference, in Portland in 2010.
- Successfully transitioned leadership to a community member with a professional marketing background, one of the original goals for my leadership of the team.

## **Sugar Labs - Volunteer (2008 - present) and board member (2009 - present)**

Sugar Labs is the international all-volunteer community behind the Sugar Learning Platform, an open source computing environment designed for children and originally developed for the One Laptop Per Child project.

<http://wiki.sugarlabs.org/go/Principles>

- Elected to serve on the Sugar Labs Oversight Board for a two year term (most terms are one year), implementing a governance framework and working on trademark and licensing agreements, the formation of international Local Labs, and opening the communities around the Sugar Learning Platform to enable outside contributors to join the Sugar Labs ecosystem.
- Part of the Sugar on a Stick release team that approves and oversees all the product's technical features. Sugar on a Stick is a Fedora-based operating system featuring the Sugar Learning Platform on an ordinary USB

thumbdrive, reducing the cost of deployment from \$200 per student (for a laptop) to \$10 per student (for a thumbdrive). Co-led the marketing and recruitment campaign for "Mirabelle," our third release, which included a complete redesign of the project's web presence.

### **One Laptop Per Child - QA/Support engineer, community organizer (2007 - 2009)**

One Laptop Per Child is a nonprofit with the mission of empowering the children of developing countries to learn by providing one connected laptop (the "XO" computer) to every school-age child. <http://laptop.org>

- I started as a volunteer during my last year of college by simply beginning to show up at the office and working on whatever tasks - code, editing, etc. - needed to be done that day. Eventually I noticed that the project's engineering employees had more work than they could do, and that many volunteers with an engineering background wanted to help but couldn't find a way to get started. So I took on the task of community building for the project and organized OLPC's first hackathon at Olin College. In one weekend, we doubled the number of software Activities available on the platform and kick-started a group of volunteers that could teach and sustain themselves, and continue to grow in number without extensive intervention from project employees.
- Based on this, Walter Bender (OLPC's President at the time) hired me as an intern, in part because they wanted to send me to a conference in Taiwan to present on behalf of the project. After returning from Taiwan, I continued doing engineering community work at OLPC, helping local groups start, founding a university chapters program, and running hackathons throughout the US.
- Left the Boston headquarters of OLPC to run an experimental grassroots office in Chicago staffed entirely by student volunteers ranging between the ages of 12-23. At the time, it was the first physical office outside of Boston dedicated to full-time OLPC work; the initiative for the office came from the student group.
- An important note is that I did much of this work in my free time and on my own initiative during a self-imposed "gap year" during which I deferred permanent employment in order to travel and take a series of full-time internships on open source and education projects. After my gap year ended, OLPC hired me as a full-time Support/QA engineer. Along with one other full-time engineer, I was responsible for supporting all one million laptops deployed worldwide; the other half of my job was quality assurance for the project's entire hardware and software stack. In order to fulfill these responsibilities, I continued to build volunteer teams and communities to assist us with our work, ending with a successful release in December 2008.

## **The Open Planning Project - Software Engineering Intern (Summer 2007)**

A Manhattan-based non-profit technology organization focused on civic engagement and open government. <http://openplans.org>

- Development and testing on the Python-based Open Plans collaboration suite in addition to working with the volunteer Open Plans deployment community to improve installation instructions and collect feedback that made the product easier to administer
- Taught other developers in the office Trac plugin development after writing the TracBacks plugin (<http://trac-hacks.org/wiki/TracBacksPlugin>) in response to noticing the inefficiency of engineers doing ticket cross-referencing manually
- Represented the organization at PyCon 2007, the largest Python language convention in the world; ran a Sugar development hackathon at the event

## **Design Continuum - Electrical Engineering Intern (Summer 2006)**

Design Continuum is a product development, design, and strategy firm headquartered in Boston, MA. <http://dcontinuum.com>

- One of five electrical engineers in the entire company; assisted with construction and testing of consumer and medical electronic devices the team was contracted to design.
- Created a PIC-based USB peripheral development kit to accelerate the prototyping of consumer electronic devices by other members of my team.
- By the end of the summer, I had been given full responsibility for the design and maintenance of the test rig for one of my team's electromechanical consumer devices. (For instance, if my team's component had been a robotic arm, this would be the equivalent of designing a full simulation of the rest of the robot responding to environmental conditions and providing a hardware interface from that for the physical arm prototype to plug into and be exercised by.)
- While working at Continuum, I noticed our timesheet software could be streamlined, saving the company tens of thousands of dollars worth of employee-time per year. I took the initiative to start a side project to investigate this on my own time, asking the company's anthropologists and UI designers to teach me how to analyze the current software and its usage so we could make concrete suggestions for improvement. Shortly after I presented my report, the company reevaluated its timesheet software and took this feedback (gathered from the entire Boston office) into account.

## **MIT Media Lab, Personal Robots Group - Software Engineering Intern (Summer 2005)**

Research question: can a social robot increase compliance with a medically prescribed diet and exercise program?

- Built the first iteration of the research platform for this study based on the Sony AIBO robot while my grad student advisor was away in China.
- Taught myself the platform's development environment from a reference manual written in Japanese (which I only have rudimentary communication skills in) and was teaching others how to use the platform via an online forum by the summer's end.

## **Franklin W. Olin College of Engineering - Teaching and Research Assistant (2003-2007)**

I worked in the library as a general student assistant and in IT as a web developer, but my favorite roles all involved teaching, notably the two classes described below.

- Integrated Course Block (ICB) Math and Physics teaching assistant: ICB is a required first-year course that consists of calculus, vector calculus, linear algebra, and physics (mechanics and electromagnetics).
- Engineering of Compartment Systems (ECS) teaching assistant: ECS is a required first-year course covering feedback and control loops in various engineering disciplines, along with basic programming and electronics. I was responsible for 2 tutorials of 6 students each, ran recitations and helped with lab reports.

## **Northwestern University Center for Talent Development - C++ Teaching Assistant (Summer 2004)**

- Developed and graded labs and provided pedagogical support for gifted teenagers in a university summer program
- Encouraged students to explore other areas of programming - the Python and Scheme languages, networking, game designs, algorithms, etc. - and spontaneously created game demos on the fly to illustrate everything from object-oriented programming to why the class needed to stay closer together while walking to lunch.

## Education

### **Franklin W. Olin College of Engineering - Bachelors of Science in Electrical and Computer Engineering, 2007**

Olin is a private undergraduate engineering college located in Needham, Massachusetts that is noted in the engineering community for its youth, small size, project-based curriculum, and focus on innovation in engineering education, which includes a great deal of student involvement in the design and running of the school itself. <http://olin.edu>

- Recipient of 4-year merit-based full tuition and board scholarship
- Served as a student representative on the Academic Recommendations Board (ARB) during the revision of the college's curriculum
- Editor-in-chief of Frankly Speaking, Olin's student newspaper, my sophomore year

### **Illinois Mathematics and Science Academy - 2003**

IMSA is a residential public magnet school for students with a special interest in math and science in the state of Illinois. <http://imsa.edu>

- Graphics editor for The Acronym, IMSA's student newspaper
- President of Pseudo, IMSA's improvisational theatre club
- Curriculum design and teaching for art, science, and math summer camps held at IMSA's campus in summer 2001, 2002, and 2003
- Independent studies included doing graphics for a student-produced RPG computer game engine and designing and fabricating a polymer quenching experimental apparatus as part of Drexel University's zero-gravity research team

## Awards

- Finalist in the Japan Design Foundation 2006 International Design Competition as a member of the "Echo Robotics" team; one of 3 members of the team who flew to Japan to present our project. As the only team of undergraduates and the only team of engineers in a competition otherwise populated by professional designers, design firms, and graduate students, we ended up setting up an impromptu consulting table after the competition to advise the other teams on how to modify their designs to be more manufacturable.

## Publications

- Co-author of the "Getting the Code" chapter on version control systems in "Practical Open Source Software Exploration: How to be Productively Lost, the Open Source Way," which will be used by professors at Oregon State University, Worcester State University, and Seneca College during the Fall 2010 semester. The entire text is available online under an open content license. The last release of the chapter is available at [http://teachingopensource.com/index.php?title=Getting\\_the\\_Code&oldid=3620](http://teachingopensource.com/index.php?title=Getting_the_Code&oldid=3620) and a revision for the end of August is underway.
- November 15, 2010: Three unspoken blockers that prevent professors from teaching open source community participation - <http://opensource.com/education/10/11/three-unspoken-blockers-preventing-open-source-participation>
- September 2, 2010: An open source education - for educators - <http://opensource.com/education/10/9/open-source-education-educators>
- June 2, 2010: Scholarships for Open Source Contributors - <https://opensource.com/education/10/5/scholarships-open-source-contributors>
- February 10, 2010: Telling our Stories to the National Academy of Engineering  
<https://opensource.com/education/10/2/telling-our-stories-national-academy-engineering>

## Professional Memberships

- Association for Computing Machinery/ACM (member of Special Interest Group in Computer Science Education / SIGCSE) - <http://acm.org>
- American Society for Engineering Education/ASEE - <http://asee.org>
- Institute of Electrical and Electronics Engineers/IEEE (member of Education Society and Computer Society) - <http://ieee.org>

## Recent Invited talks

- SIGCSE 2011 (upcoming): Gregory W. Hislop, Heidi J. C. Ellis, Matthew C. Jadud, and Mel Chua, "Open Source Software Education: Opportunities and Challenges" - Panel Session
- Engineer of the Future 3.0: Mel Chua and Sebastian Dziallas, "Engineering Education + Open Source = Great Justice" Ignite Talk
- FIE 2010: Panel, Heidi J. C. Ellis, Gregory W. Hislop, Mel Chua, Clif Kussmaul and Matthew M. Burke, "Teaching Students to Participate in

Open Source Software Projects" - (<http://fie-conference.org/fie2010/sessions/F2B.htm>, covered in <http://opensource.com/education/10/11/frontiers-education-recap>)

- OSCON 2010: Karsten Wade and Mel Chua, "5 FOSS in Edu Projects that Changed the World" (<http://www.oscon.com/oscon2010/public/schedule/detail/14024>)
- OSCON 2010: Mel Chua and Asheesh Laroia, "Junior Jobs and Bite-sized Bugs: Entry Points for New Contributors to Open Source" (<http://www.oscon.com/oscon2010/public/schedule/detail/14066>)
- Ohio LinuxFest 2010: Mel Chua, "Glorious Failures in FOSS and Education" (<http://www.ohiolinux.org/fri-speakers#FAILURES>)