Nirav Patel

CONTACT INFORMATION

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OBJECTIVE

To make Science Fiction fact.

EDUCATION

Carnegie Mellon University, Pittsburgh, PA — **May 2009**
B.S. Electrical and Computer Engineering
GPA: 3.18/4.00 In Major: 3.30/4.00

WORK EXPERIENCE

Apple Inc., Cupertino, CA — **2009 - Present**
Software Development Engineer

- Designed and implemented GKVoiceChat, a self configuring and healing star topology based multiuser audio chat library for mobile devices.
- Development and integration of audio real time networking stack for the FaceTime video calling app.
- Prototyped mobile device based telepresence robot.

One Laptop Per Child, Google Summer of Code — **Summer 2008**
Developer

- Designed and developed open source camera and computer vision libraries in C and Python for the Linux based operating system on OLPC's XO laptops.

Palau Ministry of Health, Koror, Palau — **Summer 2008**
Technology Consultant

- Developed sustainable data management solutions for the Ministry of Health's Medical Library and Public Policy staff.

Dominion, Millstone Nuclear Power Station, Waterford, CT — **Summer 2007**
Electrical Engineering Intern

Westbrook Public Schools, Westbrook, CT — **Summer 2005, Summer 2006**
IT Technician

TEACHING EXPERIENCE

Carnegie Mellon University, Pittsburgh, PA — **Spring 2009**
Teaching Assistant for 16-311 Introduction to Robotics

- Guided students through designing, building, and programming robots.

RESEARCH EXPERIENCE

Carnegie Mellon University, Pittsburgh, PA — **Fall 2008**
Vision and Mobile Robotics Laboratory

- Improved accuracy of computer vision based localization project using Matlab.

ACTIVITIES

Student Technology Outreach Program Coordinator, Pittsburgh, PA — **2007 - 2009**

- Started program to repair and recycle computers for non-profits.

Pygame Core Developer — **2008 - Present**

- Continued camera and graphics library development in Python and C.

Spongezone Founder and Webmaster — **2002 - Present**

- Created website receiving 10,000+ visitors per day at peak.

PROJECTS

Adjacent Reality Tracker **2011 - Present**

- Designing wireless and USB interfaced low latency inertial measurement unit.
- Developing embedded sensor fusion and control software and desktop side interface libraries.

Snow Globe Spherical Display **2011**

- Designed a low cost spherical display using a laser picoprojector, fisheye lens, frosted glass globe, and 3D printed mounts.
- Developed GPU shader accelerated virtual earth application with real time low Earth orbit satellite tracking.

Wireless Networked Crowd Interaction Wands **Spring 2009**

18-549 Embedded Systems Design

- Designed and built AVR powered, ZigBee networked wireless game controllers.
- Devised and developed wand, server, and game side network architecture using C, Java, and Python.
- Developed crowd games using computer vision and physical input in Python.

Assorted Open Source Software and Hardware Projects **2008 - Present**

https://github.com/nrpatel and http://eclecti.cc/portfolio

- Low cost virtual retinal display.
- Augmented reality viewer for 3D printing.
- Tools for reverse engineering Lytro camera compressed format.
- Web based 3D model visual diff viewer.
- 3D printable household key generation scripts.
- Kinect based Minecraft skin generator.
- Kinect based printable 3D model copier.
- Handheld virtual reality projection gun.
- Libraries to interface HMC5843 magnetometer and PNI SpacePoint IMU.

AWARDS

Editor's Choice, Bay Area Maker Faire **2011**
Dean's List, Carnegie Institute of Technology **Fall 2008**
Hack for Good Award, Yahoo! University Hack Day **2008**

SKILLS

Programming Languages:

- Proficient: C, Objective C, Python
- Comfortable: C++, Java, Perl, Bash, Lua, GLSL, ARM Assembly, AVR Assembly

Software:

- Operating Systems: Mac OS X, Linux, Windows
- Tools and Libraries: Git, SVN, Vim, GDB, OpenGL, OpenCV
- Programs: Eagle, OpenSCAD, Matlab

Hardware:

- Embedded Systems: AVR, Arduino, BeagleBoard
- Other: RepRap 3D Printer, Microdistillery design and operation