

# Wayne Manselle

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<b>Date of Birth</b>	13 <sup>th</sup> April 1983	<b>Email</b>	wayne@waynemanselle.com

## Personal Profile

I am a programming enthusiast who enjoys exploring interesting problems. I have a special interest in those problems whose solutions improve scientific understanding or the human community.

## Software Engineering Skills

### ■ Programming Languages

Experienced: *MATLAB, Javascript, HTML+CSS, BASH*

Proficient: *C/C++, VBA, Java, LaTeX*

Exposure: *PHP, Ruby, Python, Turbo Pascal, Scheme, QBasic*

### ■ Technical

*Debian and Ubuntu Linux* - Server Administration

*CVS, git* - source version control

*Motion Capture, Magnetic Tracking, EMG, EEG, AMTI Force Plates* - Data Collection Systems

## Education

**2005-2007** MS in Computer and Information Science - The University of Oregon, Eugene, OR  
*Project - Haptic Campus Map for the Visually-Impaired*

**2001-2005** BAs in Computer Science and Philosophy - University of Minnesota, Morris, MN  
Minor: Statistics  
*Thesis: Fuzzy Logic Semiotic Systems*  
*Thesis: Could a Machine Ever Understand?*

## Employment Experience

**Jun 2007 -** Woollacott Motor Control and Cognition Lab, University of Oregon, Eugene, OR  
**Jan 2015** *Research Assistant*

**Technologies:** MATLAB, Ruby, BASH, Mediawiki, VBA, Cortex, NetStation, E-Prime.

- Provide custom software and hardware solutions to research problems
- Provide direct technical support to lab residents
- Build and maintain lab website
- Responsible for equipment acquisition and research
- Responsible for securing and organizing information resources
- Responsible for lab administrative tasks

**May 2006 -** Paul's Bicycling Way of Life, Eugene, OR  
**Aug 2006** *Technology Transfer Intern*

**Technologies:** Ubuntu, LaTeX.

- Transition company from Windows to Unix
- Port the in-house developed customer databases
- Write comprehensive technical documentation for new systems
- Instruct staff in use of new systems

**May 2004 -** Southern California Earthquake Center, Los Angeles, CA  
**Aug 2004** *Software Engineering Intern*

**Technologies:** Java, Java3D, XML, Eclipse.

- Participate in the redesign of LA3D into SCEC-VDO
- Assist in the design and implementation of system's plugin architecture
- Designed project critical memory optimization for object presentation
- Design and implement the project's ability to save and load system state and catalogs of seismic events

**Aug 2003 -** Computer Science Teaching and Development Lab, University of Minnesota: Morris, Morris, MN  
**May 2005** *System Administration Intern*

**Technologies:** Debian Linux, BASH, TWiki, Java.

- Maintain 3 servers and 40 end-user workstations
- Offer tutoring for all students in computer science program
- Develop and maintain lab's technical documentation
- Advise department on technical acquisition and equipment maintenance

## Research Project Experience

**Sep 2011 -** Study of Acquisition of Reaching Ability in Typically Developing Infants and Children with Severe CP  
**Dec 2014** *Jennifer Rachwani and Victor Santamaria-Gonzalez*

**Technologies:** MATLAB, Ruby, OpenSHAPA, Excel, C, Magnetic Tracking, EMG.

- Design and implement interactive visual analysis tools for Kinematic, EMG, and EKG data
- Improve existing data analysis tools from related previous studies
- Improved and extended OpenSHAPA video coding scripts
- Improved existing magnetic tracking operating software

**2011 -** Biomechanical Study of Expert and Novice Approaches to Cello Bowing  
**2013** *Julius Verrel, Steven Pologe, Ulman Lindenberger and Marjorie Woollacott*

**Technologies:** Cortex, Motion Analysis System, MATLAB.

- Adapted Dr. Verrel's experiment design to Dr. Woollacott's equipment
- Prep and instrument human subjects
- Assist in directly conducting data collections
- Assist collaborators in Berlin in the processing and analysis of resulting data

**2009 - 2014** Undergraduate Honors Theses examining Development of Reaching Skills in Infants  
*Francine Porter, Staci Wood, and Tabit Xthona*

**Technologies:** MATLAB, Ruby, Ruby, C, R.

- Design and implement prototypes of visual data analysis tools
- Design and implement automated data analysis systems
- Improve and expand video coding scripts
- Add requested functionality to magnetic tracking system control software
- Instruct undergraduate researchers in data analysis and collection protocols

**2008 - 2012** Visual-Postural Dual Task Study  
*Carrie E. Little*

**Technologies:** MATLAB, E-Prime, Net Station, VBA, Motion Analysis System, Hydraulic Force Plate System, EMG, EEG.

- Port Ed Vogel's Change Detection Task to function with hardware available for the study
- Adapt the Change Detection Task to Dr. Little's specification and to incorporate EEG collection
- Build custom synchronization system to link Motion Analysis System, Hydraulic Force Plate System, and EEG
- Assist in collection of human subjects data
- Design and implement data analysis software
- Aid Dr. Little in the design of EEG analysis and processing tools

**2008 - 2012** Effects of Various Exercise Modalities on P3b ERPs and other Physiological Measures  
*Teresa Hawkes*

**Technologies:** MATLAB, E-Prime, Net Station, Motion Analysis System, EEG.

- Port the Smallwood Go/No-Go and Mayr Task Switch paradigms to function with hardware available for the study
- Adapt the Smallwood Go/No-Go and Mayr Task Switch paradigms to incorporate EEG collection
- Assist Dr. Hawkes in the design, acquisition and construction of her experimental apparatus
- Assist Dr. Hawkes in converting an existing space into a sound attenuated, electrically shielded EEG collection booth.
- Instruct and aid Dr. Hawkes in the design design of EEG analysis and processing tools
- Assist Dr. Hawkes in the validation of her Tai Chi skill assessment system

- 2007 - 2011** Posture Control in Typical Developing Infants and Subjects with CP  
*Sandy Saavedra*
- Technologies:** MATLAB, Magnetic Tracking System, EMG, C.
- Assist Dr. Saavedra in the design and implementation of data analysis tools
  - Assist Dr. Saavedra in the implementation of a novel approach to remove EKG artifact from EMG
  - Implement requested improvements to the Magnetic Tracking System's control software
  - Instruct Dr. Saavedra in elementary algorithms and software design
- 2007 - 2010** Examination of the Effects of Meditation Training on Attentional Networks using EEG  
*Aditi Joshi*
- Technologies:** MATLAB, E-Prime, Net Station, Excel.
- Review and improve design of EEG analysis tools
  - Review and improve external EEG data processing scripts
  - Assist Dr. Joshi in data analysis
  - Review Dr. Joshi's statistical analysis and add criteria for excluding outlier subjects
- 2007 - 2010** Cerebral Palsy Training Pilot Study  
*Sujitra Boonyong*
- Technologies:** Motion Analysis System, MATLAB.
- Design and Implement visual tool to aid Dr. Boonyong in review subject responses
  - Assist Dr. Boonyong in human subjects data collections
- Jan 2005 - May 2005** Niching in Evolutionary Computation  
*Nic McPhee*
- Technologies:** Java.
- Assist Dr. McPhee in the implementation of a Hamming Distance method of evaluating the exploration of genetic algorithms in multi-objective problem spaces
  - Conducted evaluations of Hamming Distance method

## Teaching Experience

- Winter 2010** Woollacott Motor Control and Cognition Lab, University of Oregon, Eugene, OR  
**Seminar: Introduction to MATLAB Programming for Scientists**
- Developed Syllabus and Course Materials in conjunction with Dr. Sandy Saavedra
  - Co-Lectured with Dr. Sandy Saavedra on a weekly basis
  - Worked one-on-one with seminar participants to improve MATLAB understanding
- Fall 2006** Department of Computer and Information Science, University of Oregon, Eugene, OR  
**CIS 210**
- Instruct students in implementation of elementary algorithms in Java
  - Lead two weekly lab sections
  - Held regular open office hours

- W & S 2006** Department of Mathematics, University of Oregon, Eugene, OR  
**Business Calculus**
- Instruct students in using Excel to utilize calculus in evaluating business situations
  - Conduct two weekly lab sessions
  - Held regular open office hours

## References

### Service

**Dec 2013 -** Chiptunes=WIN  
**Present** *Blogger*

- Write a monthly column covering interesting Chiptune Releases
- Edit other author's columns
- Created and help curate a historical index of Chiptune, VGM, and Nerdcore music

**Jan 2013 -** AAUP, Oregon State Chapter  
**May 2013** *Interim Secretary*

- Assist in re-establishment of Oregon State Chapter of AAUP
- Take minutes at preliminary meetings

**May 2010 -** United Academics of the University of Oregon  
**June 2013** *Organizing Committee Member*

- Sit on decision making body for UAUO during its formation
- Chaired committee to decide bargaining issues related to Working Conditions
- Facilitate outreach meetings with non-tenure track research faculty on campus

**Jan 2006-** Graduate Teaching Fellow Fellowship  
**Dec 2006** *Department Steward*

- Liason between GTFF and UO's CIS graduate students
- Serve on GTFF Executive Committee
- Sit on Office Conditions Committee

**Jan 2006 -** ACM Student Chapter, University of Oregon  
**Dec 2006** *President*

- Facilitate Meetings
- Assist in re-establishment of chapter

**Aug 2004 -** ACM Student Chapter, University of Minnesota: Morris  
**May 2005** *Secretary*

- Take minutes at meetings

**Oct 1999 -**   Cosmik Inc., New London, MN  
**Aug 2000**   *Vice President*

- Assist in founding of non-profit to put computers and internet access into the hands of the less fortunate
- Negotiate with local ISPs for low-cost Internet Access
- Acquire and refurbish donated computers
- Teach end users how to use computers and the Internet

## **Interests**

- **Martial Arts: Systema, Aikido, HEMA**
- **Fitness: Running, Hiking, Nutrition**
- **Composition and Review of Chiptune Music**
- **Creative Writing**