

Emmanuel Contreras Guzmán

Madison, WI

Education

University of Wisconsin-Madison

Masters of Science - Biomedical Engineering

May 2018

GPA: 3.65/4.0

Bachelor of Science - Biology

Aug 2012

Certificate - Computer Science

GPA: 3.5/4.0

Relevant Coursework

Software Engineering

Computers in Medicine (Analog to Digital Signal Processing)

Medical Design and Manufacturing

Android Applications Development

Occupational Ergonomics and Biomechanics

Medical Instrumentation

Human Computer Interaction

Communication Networks

Projects

HelpingHands - University of Wisconsin-Madison, Computer Science Department

Sept 2017 - Dec 2017

Course: Software Engineering 506

Developed "HelpingHands", an application in which a person needing help on a task, could be matched with another person on campus who would be qualified with the skills to help them complete the task. Developed using the Ionic Framework (Javascript, HTML, CSS).

- Planned, designed, implemented and troubleshoot many aspects of the project including creating views and controllers, also organized meetings and oversaw the project overall.

Cervical Cancer Pre-Screening Software Application - Biomedical Engineering Project

Jan 2014 - May 2018

Explored image processing algorithms for isolating cytoplasm and nuclei to calculate the cytoplasm to nucleus ratio of a cell in order to determine if a cell could be likely to become cancerous.

- Used C++/OpenCV and later MatLab to research and test cell segmentation algorithms to calculate various properties.

Mouse Urine Monitoring Device - Department of Veterinary Medicine - Urology

May 2016 - May 2017

The Department of Urology conducts research studies on mouse prostates by continuously monitoring urine flow through the prostate after it has become enlarged due to hormonal imbalances.

- Planned, implemented and documented a system using a raspberry pi, camera module, and python to log weight from a scale continuously, as well as recorded a video only when mice voided or defecated.

Adaptation of Strain Gauge Sensor - Department of Veterinary Medicine - Urology

Dec 2016 - May 2017

Highly accurate strain gauge sensors are used to measure muscle tension. The department of urology required a solution to use these sensors to measure minute urine quantities in mice to study the functionality of the prostate.

- Designed and 3D printed a urine collection adapter funnel. Two iterations were completed until they were satisfied.

Professional Experience

Teaching Assistant - General Chemistry (Chem-108: Chemistry in Our World)

Jan 2018 – May 2018

University of Wisconsin-Madison - Department of Chemistry

- Effectively lead two discussion sections and labs for 35 non-chemistry majors.
- Coordinated with TA's and professors to make sure the class of 175 students ran smoothly and homework, worksheets, labs and exams were graded in a timely manner.

Project Assistant - Division of Information Technology – Academic Technology (DoIT-AT)

Jan 2015 – Dec 2017

University of Wisconsin-Madison

- Collaborated with support staff on providing administration and technical support for the learning management systems on campus (Canvas and Desire2Learn)
- Provided thorough software testing of various university software including Case Scenario Critical Reader Builder and AEFIS course evaluation system.

Lab / Teaching Assistant - E-Business Consortium - Internet of Things Research Center

July 2015 - Dec 2017

University of Wisconsin-Madison

- Successfully provided technical support for students on their projects and for the lab equipment.
- Created various tutorials and documentation for internet connected gadgets and projects used in the lab.

Hardware Experience

- Knowledge of current and legacy computer hardware
- Experience with computer hardware assembly and troubleshooting
- Basic knowledge of electrical wiring and soldering
- **Microcontrollers:** mBed Nucleo, Raspberry Pi, Arduino

Software Experience

- **Operating Systems** – Windows, macOS, Linux (Ubuntu), Ubuntu Server
- **Programming Languages** – Java, CSS, HTML, Python
- **Web and Graphical Software** – Wordpress, Photoshop
- **Integrated Development Environments** – IntelliJ Idea, PyCharm
- **Text and Data Processing** – Microsoft Office Suite, Google Suite
- **Other Software** – Git, GitHub, Adobe Premiere, Audacity, OpenVPN

Languages

- Spanish – Fluent
- French – Conversational

Honors and Awards

- Dean's List – Fall 2009 – University of Wisconsin – Madison
- National Society of Collegiate Scholars *invitee* (2008) - Requirement of a cumulative 3.4 GPA
- Recipient of UW Credit Union Scholarship (2007)
- Outstanding Latino Academic Achievement Award (2000)