FRANCISCO MERCADO

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WORK EXPERIENCE

Grasshopper (Google Area 120) JavaScript Curriculum Developer *San Francisco, CA*	» Grasshopper is a mobile app to teach people how to code with 2M downloads, 4.7 rating, 125K graduates from the flagship course » Created over 200 JavaScript lessons with 35M runs and about 2000 years of lessons taught, covering intro CS topics and animations with D3 » Designed and created Hoppy Grace, an in-app game used as an April Fools Easter Egg » Identified and advocated for several improvements to curriculum creation tools, resulting in a 75% reduction in overall time to author lessons » Trained 3 other JS Curriculum Developers » Created a library of JS and ESQuery useful patterns, referenced daily by other JS Curriculum Developers » Developed a support process and triaged over 6000 user reports » Managed a user forum by creating lesson tutorials and answering questions	Present 2017–09
Roadview Rapid Deployment Engineer *Madison, WI*	» Repaired and operated a semi-autonomous Hummer converted to drive-by-wire » Created GPS waypoint routes with QGIS and MongoDB to guide the Hummer and collect pavement data for OAK airport and benchmark trails for Mazda	2017–08 2017–06
Roadview Field Systems Operator *Madison, WI*	» Surveryed nearly all state and county highways for OK, IL, DE, MD, and HI DoTs » Repaired, operated, and validated pavement surveying systems including: DGPS, IMU, DMI, lidar, laser crack measurement, and panoramic cameras	2017–04 2016–06
Simulation Based Engineering Lab Research Assistant *Madison, WI*	» Validated an in-house C++ physics engine, CHRONO, by comparing results to papers from Nature and Science » Used CHRONO, Irrlicht, POV-Ray, and FFmpeg to simulate: » Spontaneous synchronization of coupled metronomes (real-time & interactive) » Locomotion of a six-legged robot (lizard) on granular terrain » Mixing of sand-like particles in a rotating barrel	2015–12 2012–12

ACCOMPLISHMENTS

Promoting Computational Science Initiative (ProCSI), July 2013 & July 2014
» Recruited, organized, chaperoned summer camp for HS students underrepresented in engineering

Lindbergh Lecture Presentation, September 2013
» Presented research to UW-Madison Mechanical Engineering graduate students and faculty

Recognition of Outstanding Student Employee (ROSE) Award, March 2012
» Employees are nominated by their supervisor
» A panel selects the top 1% based on reviews from customers, coworkers, and supervisors

Dean's List of Distinguished Students, Fall 2011—Fall 2015 (all semesters)

Grainger Engineering Scholarship, August 2012—May 2015

EDUCATION

University of Wisconsin–Madison	Dec 2015
» B.S. Mechanical Engineering	3.70/4.00
» B.S. Mathematics	3.10/4.00
» Computer Science Certificate	3.80/4.00
GPA:	3.62/4.00

PROGRAMMING LANGUAGES (DESCENDING EXPERIENCE)

JavaScript	» Created lessons for Grasshopper
Java	» MNIST classifier from scratch, OSM A* path finder
Python	» Vigenère cypher cracker, YouTube/Instagram user archiver
MATLAB	» 2D physics engine for kinematics and dynamics
C	» PID & DDA stepper motor control, etc. on ATmega2560
C++	» CHRONO unit tests, validation, demos
Perl	» Game bots (MMORPG & arcade)