MARTIN VELEZ

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EDUCATION

Ph.D. in Computer Science, University of California, Davis 2018
Thesis: Minimizing Technical Barriers to Learning Programming
Advisor: Prof. Zhendong Su

B.A. in Economics with minor in Computer Science, University of California, Davis 2010

SKILLS

Languages	Java, Python, Ruby, JavaScript, Bash, R, SQL, C, and `C++`
Web Technologies	Ruby-on-Rails, AngularJS, HTML, CSS, JQuery, Firebase, Amazon S3 and EBS
Other Tools	Linux, Unix Tools, Git, PostgreSQL, Docker, Eclipse, Vim, Nginx, Memcached

EXPERIENCE

Graduate Student Researcher Jun 2012 - Present
University of California, Davis *Davis, CA*

- Formalized a new NP-complete problem, MINSET, and proposed it as a novel approach of identifying semantically important source code. Wrote a Java program to find the minset of millions of Java methods for an empirical study.
- Collaborated on creating the new SCAA and WCR Coffee Tasters Flavor Wheel used widely in the coffee industry. Developed a hierarchical sorting tool using AngularJS and Firebase. Featured on the cover of the Journal of Food Science.
- Studied the feasibility of using RFID to track cows' grooming behavior. Wrote a Java program to interface with the RFID hardware and to store data in PostgreSQL, and built a real-time web user interface. Published in Journal of Dairy Science.

Teaching Assistant Sep 2015 - Mar 2017
University of California, Davis *Davis, CA*

- Lectured classes, led class discussions, tutored students in office hours, graded programming assignments, and proctored exams in undergraduate "Introduction to Programming" and "Programming Languages" having up to 400 students.

Student Research Assistant Jun 2009 - May 2012
University of California, Davis *Davis, CA*

- Investigated methods to dynamically analyze and reverse engineer `C++`, JavaScript, Java, x86 assembly obfuscation engines.

Software Engineer Sep 2007 - Apr 2010
University of California, Davis *Davis, CA*

- Developed a Linux, Apache, MySQL, and PHP web application which handled all of the personal data and appointments of over 600 families participating in a 10-year $10M child development research study.

SELECTED PROJECTS

Kodethon 2014 - Present
https://kodethon.com

- Developed Kodethon, a web IDE that supports programming in C, `C++`, Python, Java, Lisp, and Prolog, to aid CS education at the university level. Used various technologies including Ruby-on-Rails, AngularJS, PostgreSQL, and Docker. To date, it has been used by over 3,000 students in over 15 courses at UC Davis.

CompAssist 2016 - Present
https://srg.cs.ucdavis.edu/metacompiler

- Invented a novel technique to automatically synthesize minimal compilation repair examples. Implemented a prototype in Java. Achieved over 50% coverage of `clang++` compiler errors. Built a web tool called COMPASSIST using Ruby-on-Rails.

AWARDS

Graduate Research Fellowship, National Science Foundation 2013 - 2018
Travel Award, Computer Aided Verification Mentorship Workshop 2016
Gold Medal, ACM Student Research Competition at SPLASH 2014
Towards Outstanding and Promising Students Fellowship, UCD College of Engineering 2012