Jorge Garza

Ph.D. Student

CONTACT

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KNOWLEDGE

"Mix of Information Technology (Programming) & Engineering (Computer Hardware)"

AREAS OF EXPERIENCE

- Software Development
- Embedded Systems
- PCB Layout Design
- Full-stack Web Development
- IoT
- Research and Development

SKILLS

- C/C++
- JavaScript
- HTML
- Firmware
- Embedded Linux
- Node.js
- SQL

LANGUAGES

- Spanish

I am a Ph.D. candidate in the Department of Computer Science and Engineering (CSE) at the University of California, San Diego (UCSD). I am a member of the Non-Volatile Systems Laboratory (NVSL) and the Center for Networking Systems (CNS) and currently working with Professor Steven Swanson. My research interests are web interfaces, human-computer interaction, computer architecture, IoT, and embedded systems. My research objective is to facilitate the design of electronic devices by creating novel Computer-aided design (CAD) tools.

EDUCATION

2016 – Present
University of California, San Diego, La Jolla, CA, United States. *(Expected grad. date: July 2022)*
Ph.D. Computer Science (GPA 3.5)

2014 – 2016
University of California, San Diego, La Jolla, CA, United States.
M.S. Computer Engineering

2008 - 2012
Monterrey Institute of Technology and Higher Education (ITESM), Monterrey, N.L, Mexico.
B.S. Electrical & Computer Engineering

WORK EXPERIENCE

Jan 2013 – July 2014
Torrey Electronics
Embedded Software Engineer
Contributed to the development of two products. A smart labeling weight scale and temperature control system used in multiple refrigerators and freezers products. My tasks included:

- Linux device drivers development
- Bluetooth LE 4.0 firmware development for microcontrollers
- Android app development in Java
- PCB Layout design using OrCAD
- GUI development for the weight scale using Lua.

Jun 2012 – Dec 2012
Monterrey Institute of Technology and Higher Education (ITESM)
Research Assistant
Worked on a Telemedicine project integrating the IEEE 802.15.4 protocol (Zigbee stack) to Android. The objective was to research new medical applications that could exist under the IEEE 802.15.4 mesh network protocol.

Jan 2012 – May 2012
Texas Instruments
Software Test Engineer (Intern)
Recruited to perform multiple tests to validate the integrity between Android apps and the TI OMAP 4 family of processors. Most of my responsibilities were assisting senior testers execute and write bash shell scripts.

TEACHING

Spring 2015
Spring 2016
University of California, San Diego
Graduate Teaching Assistant
CSE176e/276e: Robotic System Design and Implementation: Assisted students building their own quadcopters from scratch. My assignments included helping and teaching students implementing PID controllers in microcontrollers and with PCB design.

PUBLICATIONS (see all)

Appliancizer: Transforming Web Pages into Electronic Gadgets — UIST 2020
Jorge Garza, Devon J. Merrill, Steven Swanson

Amalgam: Hardware Hacking for Web Developers with Style (Sheets) — ICWE 2019
Jorge Garza, Devon J. Merrill, Steven Swanson

SELECTED PROJECTS (see all)

Appliancizer May 2020
Appliancizer is an online synthesis tool for circuits. With Appliancizer you can transform web pages into physical devices.
skills: HTML, JavaScript, Vue.js, Python, PostgreSQL, Node.js, Full-stack, PCB Layout Design, Embedded Systems

Linuxduino Dec 2019
Linuxduino is a C++/JavaScript library that enables you to program embedded systems running Linux like an Arduino microcontroller, facilitating the development of IoT devices.
skills: C++, JavaScript, WebAssembly, Node.js, Embedded Systems, IoT