

# Joseph David Tarango

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**Objective:** Analytical research scientist position in embedded, hardware, and/or software development of standalone or integrated systems.

## EDUCATION

University of California, Riverside

Ph.D. Computer Science and Engineering — December 2015

**Adviser:** Dr. Philip Brisk, Professor of Computer Science and Engineering

**Dissertation:** Customizable Extensions for Dynamic Time Warping

M.S. Computer Science and Engineering — December 2012

**Adviser:** Dr. Philip Brisk, Professor of Computer Science and Engineering

**Thesis:** Instruction set extensions for Dynamic Time Warping

<http://dl.acm.org/citation.cfm?id=2555692.2555710>

**Pertinent Knowledge:** Apprentice Teaching, Algorithms and Data Structures, Advanced Computer Architecture, Advanced Computer Networks, Compiler Construction, Computer-Aided Electronic Circuit Simulation, Data Mining Techniques, Design and Architecture of Computer Systems, Design of Operating Systems, Digital Circuit Design, Discrete Structures, Electronic Circuits, Embedded and Real-Time Systems, Logic Design, Machine Organization, Modeling and Simulation, Network Routing, Software and Hardware Engineering of Embedded Systems, Software Engineering, Solid State Electronics, Synthesis of Digital Systems, Reconfigurable Computing, Testing & Verification Techniques

B.S. Computer Engineering — June 2010

**Adviser:** Dr. Philip Brisk, Professor of Computer Science and Engineering

**Focus:** Computer Architecture and Embedded Systems

**Project:** Open RISC Processor Emulation Platform (FPGA)

**Pertinent Knowledge:** Assembly Programming, Algorithms, American Politics, Automata and Formal Languages, Biochemical Analysis, C++ Programming, Business Ethics, Formal Organizations, Concurrent Programming, Compiler Construction, Computer Architecture, Data Structures, Design of Integrated Circuits, Electrical Circuit Analysis, Embedded Systems, Logic Design, Machine Organization, Operating Systems, Modeling and Simulation of Dynamic Systems, Organic Chemistry, Real-Time Systems, Religious Myths and Rituals, Signals/Systems Analysis, Software and Hardware System Engineering, Solid State Electronics, Technical Communications, Technology in Pre-Modern civilizations, World History (Twentieth Century)

Crafton Hills College — June 2007

A.S. Mathematics

A.S. Physics

**Adviser:** Dr. Matthew Adams, Professor of Physics and Astronomy

**Focus:** Applied Sciences

**Pertinent Knowledge:** Mechanics (Classical, Quantum Relativistic, Statistical), Electromagnetism, Thermodynamics, and Quantum Theory Calculus (Differential, Integral, Series, Vector, Multivariable, Specialized) Linear Algebra, Probability, Statistics Chemistry, English Composition and Critical Analysis, Hardware and Information Systems, A-plus (A+), Philosophy of Ethics and Moral Virtues, Sociology

## TECHNICAL EXPERTISE

**Programming Languages**

C, C++, Perl, Python, and VHDL

**Design Software**

Altera, Cadence, Green Hills Software, PSPICE, Synopsys, Synplify, and Xilinx

**Operating Systems/Platforms**

DOS, Windows, and UNIX

## PROFESSIONAL EXPERIENCE

- **Consultant:** Worked with Jacquard Computing Inc. to build VHDL interfaces for FPGA platforms.
- **Director:** Organized and prepared teams for Association of Computing Machinery programming competition. Instructed teams on optimal communication techniques and how to efficiently code algorithms in C++.
- **Research:** Research Assistant for Dr. Walid Najjar (UC Riverside Professor) on Riverside Optimizing Compiler for Configurable Computing (ROCCC). ROCCC is a C to VHDL compiler, which enables C programs to be translated to a high-speed FPGA platform. My work included building generalized VHDL interfaces for the Pico E-16 FPGA to work with ROCCC.
- **Current Research:** Arithmetic optimization through compiler and hardware accelerators; the projects included prototyping algorithms to run on tightly coupled ASIC/FPGA and computing systems.
- **Intel Corporation:** Internship followed by Employment (2013-Present)
  - **Position:** Senior Firmware Engineer in Non-Volatile Memory Systems Group (NSG)

## INVOLVEMENT

**Memberships and Associations**

Member, AGS (Alpha Gamma Sigma Honor Society)

Member, Association of Computing Machinery

Member, Institute of Electronics and Electrical Engineers

Member, Society of Hispanic Professional Engineers

**Significant Awards**

Alliance for Graduate Education and the Professoriate Fellowship  
CCRAA Undergraduate Research Award  
Diversity Award  
Dean's Distinguished Fellowship  
Dean's List for Outstanding Academic Achievement  
EOPS/CARE/CalWorks Scholar's Award  
Hispanic Scholar's Award  
NSF EASPI (Singapore) Fellow  
Xerox SHPE Scholar's Award

**Volunteer Experience**

Computer Science / Electrical Engineering/ Physics / Mathematics Tutor  
ACM, IEEE, MESA, SeaPerch Events  
Special Olympics of Southern California  
Assistant Wrestling Coach Redlands High School, CA

**Last Updated:** September 4, 2015