



# Jon Pimentel, Ph.D.

jonjpimentel@gmail.com

## EDUCATION

**Doctor of Philosophy, Electrical and Computer Engineering**      Advisor: Bevan M. Baas  
Major: Digital Signals and Systems and Architectures | Minor: Biomedical Imaging  
University of California, Davis, August 2017      3.88/4.0 GPA  
Dissertation: "Methods for Reducing Floating-Point Computation Overhead."  
**Master of Science, Electrical and Computer Engineering**  
University of California, Davis, December 2015      3.88/4.0 GPA  
**Bachelor of Science, Electrical Engineering**  
University of California, Davis, June 2009      3.7/4.0 GPA

## WORK EXPERIENCE

### Intel Corporation, Santa Clara, CA

Silicon Architecture Engineer (2017-present)

- CPU microarchitect for power management
- Defining architecture, RTL coding, and debugging logic issues
- Delivering ROI, complexity, and schedule for next generation HPC project

### UC Davis VLSI Computation Laboratory, Davis, CA

Graduate Student Researcher (2009 – 2016)

- Developed area and power efficient sparse matrix multiplication kernels for manycore array
- Developed area and power efficient synthetic aperture radar image formation engine
- Designed hybrid floating point implementations with increasing throughput and reduced overhead

### Intel Corporation, Hillsboro, OR

Graduate Technical Intern (2013)

- RTL coding for next generation HPC project
- Helped with architecture definition, including mapping to microarchitecture implementation

### UC Davis VLSI Computation Laboratory, Davis, CA

Undergraduate Researcher (2008 – 2009)

- Implemented several kernels to run on 36 core AsAP I chip
- Wrote PERL test scripts for measuring various types of process variations
- Measured, simulated and analyzed multi-core processor hardware and applications

## SKILLS

Verilog/SystemVerilog, HSpice, Assembly (MIPS), MATLAB, C, C++, Python  
Synopsys SW (DC, PrimeTime, Verdi), Cadence SW (NC Verilog, Simvision)

## RELATED COURSEWORK

- Computer Architecture
- High Performance Computer Architecture
- Signals & Systems I & II
- Signal Analysis & Communication
- Statistical & Digital Communications
- Linear Systems and Signals
- Low Power Digital Integrated Circuit Design
- VLSI Design
- VLSI Digital Signal Processing
- Digital Integrated Circuits
- Digital Systems I & II
- Digital System Testing
- Digital Signal Processing
- Embedded Computing Systems
- Biomedical Imaging Basic Principles
- Molecular Imaging
- Magnetic Resonance Imaging
- Medical Image Analysis
- Ultrasound Imaging



# Jon Pimentel, Ph.D.

jonjpimentel@gmail.com

## AWARDS/MEMBERSHIPS/REVIEWING

- GAANN Fellowship ('09)
- Graduate Research Mentorship Fellowship ('11)
- UCD & Humanities Graduate Research Award ('12,'14)
- Frank and Carolan Walker Fellowship ('12,'14,'16)
- ECE Graduate Program Fellowship ('14,'15)
- Dissertation Writing Fellowship ('16)
- George S. and Marjorie Butler Fellowship ('14)
- ECE TA Program Support Fellowship ('15)
- ECE Travel Award ('16)
- Herbert Tryon Fellowship ('15,'16)
- Laura Perrot Mahan Fellowship ('16)
- Golden Key International Honor Society
- Institute of Electrical & Electronics Engineers (IEEE)
- Portuguese American Post-Graduate Society
- Tau Beta Pi Engineering Honor Society
- Phi Kappa Phi Honor Society
- IEEE Micro Reviewer (2016)
- IEEE Transactions on VLSI Systems (TVLSI) Reviewer (2014)
- IFIP/IEEE International Conference on Very Large Scale Integration (VLSI-SoC) Reviewer (2014)
- IEEE Design & Test Reviewer (2012)
- Design Automation Conference (DAC) Expert Reviewer (2010, 2011, 2012)
- IEEE International Symposium on Circuits and Systems (ISCAS) Reviewer (2011, 2013)

## PUBLICATIONS/PRESENTATIONS (papers in review and in preparation not listed)

1. **Jon Pimentel**,  
"Methods for Reducing Floating-Point Computation Overhead",  
Ph.D. Dissertation, Technical Report ECE-VCL-2017-2,  
VLSI Computation Laboratory, ECE Department, University of California, Davis, August 2017.
2. Brent Bohnenstiehl, Aaron Stillmaker, **Jon Pimentel**, Timothy Andreas, Bin Liu, Anh Tran, Emmanuel Adeagbo, Bevan Baas, "KiloCore: A Fine-Grained 1000 Processor Array for Task Parallel Applications,"  
*IEEE Micro*, vol. 37, no. 2, pp. 63-69, March-April 2017.  
**Invited.**
3. Brent Bohnenstiehl, Aaron Stillmaker, **Jon Pimentel**, Timothy Andreas, Bin Liu, Anh Tran, Emmanuel Adeagbo, Bevan Baas, "KiloCore: A 32nm 1000-Processor Computational Array,"  
*IEEE Journal of Solid-State Circuits (JSSC)*, vol. 52, no. 4, pp. 891-902, April 2017.  
**Invited.**
4. Brent Bohnenstiehl, Aaron Stillmaker, **Jon Pimentel**, Timothy Andreas, Bin Liu, Anh Tran, Emmanuel Adeagbo, Bevan Baas, "KiloCore: A 32nm 1000-Processor Array,"  
*IEEE HotChips Symposium on High-Performance Chips, (HotChips 2016)*. August 2016.  
**Received an invitation to an IEEE Micro Special Issue.**



# Jon Pimentel, Ph.D.

jonjpimentel@gmail.com

## PUBLICATIONS/PRESENTATIONS (CONTINUED)

5. **Jon Pimentel**, Brent Bohnenstiehl, and Bevan Baas, "Hybrid Hardware/Software Floating-Point Implementations for Optimized Area and Throughput Trade-offs," *IEEE Transactions on Very Large Scale Integration Systems (TVLSI)*, vol. 25, no. 1, pp. 100-113, January 2017. (Official date of publication July 12, 2016).
6. Brent Bohnenstiehl, Aaron Stillmaker, **Jon Pimentel**, Timothy Andreas, Bin Liu, Anh Tran, Emmanuel Adeagbo, Bevan Baas, "A 5.8 pJ/Op 115 Billion Ops/sec, to 1.78 Trillion Ops/sec 32nm 1000-Processor MIMD Array," *IEEE Symposium on VLSI Circuits*, Honolulu, HI, June 2016.  
**Received an invitation to an IEEE Journal of Solid-State Circuits (JSSC) Special Issue.**  
**-Featured in Media:**
  - a. PCWorld "Meet KiloCore, a 1,000-core processor so efficient it could run on a AA battery"
  - b. Engadget "Researchers build a 1,000-core processor"
  - c. Mashable "Researchers create low-energy, 1,000-core processor"
7. **Jon Pimentel**, Aaron Stillmaker, Brent Bohnenstiehl and Bevan Baas, "Area Efficient Backprojection Computation with Reduced Floating-Point Word Width for SAR Image Formation," *IEEE Asilomar Conference on Signals, Systems and Computers (ACSSC)*, Pacific Grove, CA, November 2015.
8. Aaron Stillmaker, Brent Bohnenstiehl, **Jon Pimentel**, and Bevan Baas, "Energy-Efficient and High Performance Many-Core Arrays," Poster, *SRC System Level Design Review*. Hillsboro, OR, May 2015.
9. **Jon Pimentel** and Bevan Baas, "Hybrid Floating-Point Modules with Low Area Overhead on a Fine-Grained Processing Core," *IEEE Asilomar Conference on Signals, Systems and Computers (ACSSC)*, Pacific Grove, CA, November 2014.  
**Best Student Paper Award, Third Place.**
10. **Jon Pimentel** and Bevan Baas, "Software/Hardware Hybrid Floating-Point Units with Low Area Overhead on a Fine-Grained Processing Core," *Technology and Talent for the 21st Century (TECHCON 2014)*, Austin, TX, September 2014.

## REFERENCES

Provided upon request

## CITIZENSHIP STATUS

U.S. Citizen