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FRANCIS SABADO II

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EDUCATION

Doctor of Philosophy in Computer Engineering **May 2017 (Expected)**
University of Arkansas, Fayetteville, AR GPA: 4.0
Awards: Doctoral Academy Fellowship

Masters of Science in Computer Engineering **Dec 2015**
University of Arkansas, Fayetteville, AR GPA: 4.0
Graduate Courses: Integrated Circuit Design, Hardware Security, Low Power System Design, VLSI Design

B. S. in Computer Engineering Minor in Mathematics *(Highest Distinction)* **May 2012**
University of Arkansas, Fayetteville, AR GPA: 3.95
Awards: Dean's List, Chancellor's List, Governor's Scholarship, Chancellor's Scholarship: (2008-2012)
Courses: Computer Architecture, Embedded Systems, Mobile Programming, Artificial Intelligence

EXPERIENCE

Software Engineer Intern **Hewlett-Packard** **June 2015 – August 2015**
Tools and Automation Team

- Provided support and maintenance for the Storage Automation Tool (SAT). SAT includes over 76 applications and is used by 6 internal HP teams. (Perl, HTML, JavaScript)
- Developed and deployed a password reset application on an Internet Information Services (IIS) server with enhanced security features including AES encryption, SSL, and HTTPS to support 65,0000 HP Inc employees. (ASP.net, C#, HTML, JavaScript, Active Directory, IIS)

Graduate Assistant **University of Arkansas** **August 2012 – Present**
TruLogic Circuit Design Lab

- Developed digital circuits and systems for ultra-low power, extreme temperature, hardware security, and asynchronous logic. (VHDL, Verilog/Verilog-A, TCL, Python)
- Instructed a course on programming foundations for 15 students, teaching students algorithms and data structures. Administered the programming foundations lab, advising 127 undergraduate students on course projects and homework. Supervised the Digital Design lab and instructed 52 students on fundamental topics of digital circuit design. (C++, VHDL)

PROJECTS

Lead –Tezzaron 3D 130nm CMOS (Ongoing)

- Created Asynchronous NCL/MTNCL library.
- Developed a fully automated Asynchronous 3D Tool Flow from RTL to GDS II

Asynchronous Fused Floating Point Complex Multiplier

- 32- Bit Asynchronous MTNCL, IEEE 754 Compliant
- Designed for Low Power: Radix-8 Encoded, Multi-staged/Pipelined

MSP430 Tapeout using IBM 90nm CMOS

- Led the physical design of the synchronous MSP430 circuit
- Synthesized Verilog RTL and created the GDSII for the synchronous MSP430

Adaptive Hexacopter

- Adaptive Systems – Fault-tolerant hexa-copter implemented using ardupilot and Nexys 7 FPGA

Differential Power Analysis Attack and Mitigation on AES

- Hardware Security –Side channel attack using power correlation on 128-Bit AES

More @ www.fsabado.com

CONFERENCE PUBLICATIONS

- Habimana J., **Sabado, F.,** and Jia Di, "Multi-Threshold Dual-spacer Dual-rail Delay-insensitive Logic: An Improved IC Design Methodology for Side Channel Attack Mitigation". IEEE International Symposium on Circuits & Systems, 11 August 2016.
- Caley, L., Chien-Wei Lo, **Sabado, F**., Jia Di, "A comparative analysis of 3D-IC partitioning schemes for asynchronous circuits," IC Design & Technology (ICICDT), 2014 IEEE International Conference on, pp.1,4, 28-30 May 2014
- **Sabado F.** and Jia Di, "Comparison of Asynchronous and Synchronous Digital Circuits under Extreme Temperatures." State Undergraduate Research Fellowship (SURF). May 2011

LANGUAGES AND TECHNOLOGIES

- **Languages:** C/C++, Java, Perl, Python, Bash, TCL, PHP, HTML, VHDL, Verilog
- **Operating Systems:** Linux, Windows
- **Development Tools:** Vim, Atom Editor, Eclipse, Netbeans, ModelSim, Sigasi Studio
- **EDA Tools:** Cadence Virtuoso, Synopsys Design Compiler, Synopsys Liberty NCX, Cadence RTL Compiler, Cadence SOC Encounter, Mentor Graphics Calibre

HONOR SOCIETY AND MEMBERSHIPS

- **Tau Beta Pi:** The Engineering Honor Society.
- **Eta Kappa Nu:** The International Electrical and Computer Engineering Honor Society.
- **Phi Kappa Phi:** The All-discipline Honor Society.
- **IEEE Student Member:** Institute of Electrical and Electronics Engineers.
- **ACM Member:** Association for Computing Machinery.

TEACHING EXPERIENCE

- **Course Instructor:** Programming Foundations II – Summer 2013
- **Graduate Teaching Assistant:** Programming Foundations II – Fall 2013, Spring 2013
- **Graduate Teaching Assistant:** Digital Design I – Fall 2012, Spring 2012

MEMBERSHIPS/ACTIVITIES

- **Filipino Students Organization:** Secretary (2016), Treasurer (2015)
- **Game Development Club:** Vice President (2011)
- **Hall Senator:** Senator (2008-2009), Representative (2009-2012)
- **Taekwondo Club/Martial Arts Club:** Membership.
- **International Cultural Team:** Membership.

ADDITIONAL SCHOLARSHIPS AND AWARDS

- Arkansas Challenge Scholarship (2008-2012)
- Phillip Murray-USWA Scholar (2008)
- Governor's Award for Musical Excellence (2008)
- Engineering Freshmen of the Year Finalist (2008)
- National Merit Corporation Scholar: Rheem (2008)
- Asian and Pacific Islander Scholar : Wal-Mart (2008)