Thomas Sevilla

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Senior Electrical Engineer

Highly motivated senior-level professional with a proven reputation for excellence in the field of electrical engineering and system design.

Self-driven Electrical Engineer and Ph.D. graduate in Engineering with several years of design and systems development experience for hardware and software supporting the scientific and consumer electronic industries. Project leader with a track record of successfully completing critical milestones and delivering products on time and according to specifications. Highly expressive and personable professional capable of learning and adapting swiftly and following directions. Significant experience in electrical design (Digital and Analog), circuit design, testing, analysis, and project coordination. Expertise in PCB Layout (SMT, Multi-layer, Flex), schematic capture, firmware creation, common communication protocols (SPI, I2C, UART), ARM/AVR microcontrollers, as well as Digital Signal Processing and Acoustics. Fluent in English and Spanish.

Highlights of Expertise

Electrical Engineering

- Electrical & Mechanical Design
- PCB Layout (Altium 17 / DipTrace)
- 3D Modeling / Design (Solidworks)
- Signal Processing (Matlab)
- Software & Hardware Integration

Project Management

- Full Lifecycle Management
- Strategic Planning
- Issue Resolution
- Team Development / Training
- Quality Assurance

Professional Experience

Vivai Solutions, Miami, FL

Staff Engineer (R&D Supervisor) (October 2017 – Present)

Oversee total product development for the hardware division of the R&D process. Provided project support which included total system development, lifecycle analysis and mentoring to junior engineers.

- Lead the development of hardware for two major products for the company. Expected sales revenue of the product exceeded $14M/Year.
- Optimized new product designs as well as improved previous designs to optimize their production and cost resulting in savings of up to $70K/year.
- Contributed to the total technology roadmap for the company providing insight on current trends and advancements. Providing a new perspective to the product line creating innovative solutions at a low cost.

SafePass Inc, Miami, FL

Technical Director (August 2017 – Present)

Oversee total product development for both the software and hardware divisions of the R&D process. Provide project support which included total system development, life cycle analysis and mentoring to junior engineers.

- Lead the development of hardware and software for the company's flagship product.
- Optimized product design in order to maximize cost efficiency for production runs.
- Contributed to the technology road map of the company providing insight on current trends and advancements. Providing a new perspective to the product line by creating innovative solutions at a low cost

National Oceanic & Atmospheric Administration, Key Biscayne, FL

Electrical Engineer (August 2015 – August 2017)

Executed hardware and circuit design and implementation while providing project support, which included creating schematics, PCB layout, mechanical hardware, and firmware. Utilized C/C++ and MATLAB to develop in-house applications targeted toward validating experiments and calibrating sensor accuracy.

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- Cut operational costs by approximately $80K per year and enhanced sampling capability for increased accuracy by conceptualizing and engineering a new expendable bathythermograph data recorder system.
- Designed a remote irradiance measuring station, including RF design for communications, schematics, and PCB and mechanical hardware design as well as firmware and final deployment logistics, all implemented under budget.
- Reduced overall manufacturing costs by over 50% through efficient outsourcing for PCB assembly.
- Served as the team lead for four design projects, delivering expert project and team management skills.

Civil & Architectural Engineering Department, Coral Gables, FL
Research Assistant (March 2014 – August 2017)

- Integral in the design and integration of Fast Fluid Dynamics utilizing Cross-Platform Parallel Computing (OpenCL) as well as C++, achieving a 1000x speedup.
- Contributed to design and validation of an In Situ Adaptive Tabulation model coupled with parallel fast fluid dynamics to facilitate fast, accurate indoor environment prediction.
- Co-authored a chapter in the 2nd edition of Building Performance Simulation for Design and Operation.
- Collaborated with Advisor to co-author three research proposals.

Electrical & Computer Engineering Department, Coral Gables, FL
Teaching Assistant (January 2015 - May 2015)
Taught and mentored students on analog and digital electronic circuits, thoroughly covering the basics of analog filters, amplifiers, and resonance circuits.

Electrical & Computer Engineering Department, Coral Gables, FL
Student Assistant (August 2013 - May 2015)
Assisted in student instruction covering basic amplifier configurations.

Education

Ph.D. Civil Engineering, Expected May 2020
University of Miami, Full Scholarship
Thesis: Renewable Energy Resources & Demand Side Management

Bachelor of Science in Electrical Engineering, Digital Signal Processing, & Acoustics
University of Miami

Technical Proficiencies

Hardware	Schematic Capture & PCB Layout Design for Analog & Digital Circuits, BT, WiFi, Equipment Debugging / Repair.
Software	MatLab (2013 & Up), Xcode, VisualStudio 2013, Maya, ModelSim, Quartus II, SolidWorks, Altera, Dip Trace v3.0, AutoCAD 2017, Altium 17.
Programming Languages	C, C++, Basic, OpenCL, CUDA, Java, HTML, Python, Bash.
Multimedia Software	Logic Pro X, Pro Tools 10, Native Instruments Suite, After Effects, Premiere Pro, Photoshop.

Affiliations

- ASHRAE, Student Branch President

Publications

- T. Sevilla, W. Tian, Y. Fu, W. Zuo, “Literature review on DERs from the perspective of SOTA models and their integration from past, present, future” (Under Drafting).
- W. Tian, T. Sevilla, W. Zuo, M. Sohn 2017, “Coupled simulation between CFD and multizone models based on Modelica Buildings library to study indoor environment control”, Proceedings the 12th International Modelica Conference, Prague, Czech (Under Review).
- W. Tian, T. Sevilla, W. Zuo, M. Sohn, “Coupling fast fluid dynamics and multizone airflow models in Modelica Buildings library to simulate dynamics of HVAC systems” (To be submitted).
- W. Tian, T. Sevilla, W. Zuo, M. Sohn, X. Han, “Literature review and research needs to couple building energy and airflow simulation” (Under Drafting).
- W. Tian, T. Sevilla, D. Li, W. Zuo, M. Wetter 2017, “Fast and self-learning indoor airflow simulation based on in situ adaptive tabulation”, Journal of Building Performance Simulation
- W. Tian, T. Sevilla, W. Zuo 2016, “A systematic evaluation of accelerating indoor airflow simulations using cross-platform parallel computing”, Journal of Building Performance Simulation, pp. 1-13.