Natanael Bertamoni

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Summary

Electrical Engineer with expertise in integrated circuit design and embedded systems. Proficient in Cadence Virtuoso, Spectre Simulator, and microelectronics development processes. Developed energy-efficient designing systems and contributed to innovative semiconductor technologies.

Technical Skills

Tools: Cadence Virtuoso, Git, Latex, Linux, RTOS Nuttx

Programming Languages: Python, C

Projects

Temperature sensor - at Master course Sep 2024 - Jan 2025

Temperature sensor based on relaxation oscillators. *end*

• Design of temperature sensor based on relaxation oscillators and target to RFID tags. To reduce costs, only one calibration point is allowed. Including AD conversion, the total current budget is less than 1 uA.

Sub Band-Gap (Resulted in one LASCAS article)- at Master course Jun 2024

Low Power and subthreshold circuit target to a temperature sensor *Cadence Virtuoso, Physics, Mathematics*

• Design of a sub band-gap to work as current reference and PTAT current to temperature sensor. The total amount of power is less than 400nW.

• Mathematical and physical modeling of the sub band-gap shown in LASCAS article publication.

• GDSII sent to Global Foundries 130nm. Waiting for return.

Chlorophyll meter - at Falker company Jan 2021 – Jul 2022

Embedded electronic *C language, I2C,GPS, Bluetooth, Altium, Nuttx*

• Developed an embedded electronic system for a chlorophyll meter using C language and integrated with I2C, GPS, and Bluetooth technologies

• Developed a Nuttx application to run the device.

• Implemented up to date hardware electronic to target new gen. communication.

Experience

Integrated Electronic Circuit Aug 2022 – Sep 2024

Master at UFSC *Florianópolis, Brazil*

• Applications of Advanced Compact MOSFET model (ACM).

• Gained experience with laboratory equipament.

• Several integrated circuits topologys were investigated - e.g. folded cascode amplifier, voltage references, currente references, oscillators.

Embedded Electronic Engineer Nov 2020 – Aug 2022

Falker *Porto Alegre, Brazil*

• Developed and deployed embedded electronics hardware and software.

• Provided production support on technical issues.

• Collaborated with cross-functional teams to deliver hardware and embedded software solutions.

Embedded Electronic intern Dec 2020 – May 2021

Falker *Porto Alegre, Brazil*

• Fixed minor software bugs in production.

• Performed PCB layout and new schematic version to fix minor bugs.

Education

UFRGS — Porto Alegre, Brazil
Lato sensu postgraduate degree in microelectronics — *currently pursuing*

UFSC — Florianópolis, Brazil
M.S. in Electronic Engineering — *currently pursuing*

UFRGS — Porto Alegre, Brazil
B.S. in Electrical Engineering — *Dec 2021*

Certifications

- Cadence Virtuoso (PVS) Physical Verification System [click] on May, 2024.
- Spectre Simulator Fundamentals S3: Small-Signal Analyses [click] on May, 2024.
- Spectre Simulator Fundamentals S2: Large-Signal Analyses [click] on Aug, 2023.
- Spectre Simulator Fundamentals S1: Spectre Basics [click] on Aug, 2023.
- Project Planning: Putting It All Together [click] on Jan, 2023.
- Project Initiation: Starting a Successful Project [click] on Aug, 2022.
- Foundations of Project Management [click] on Mar, 2022.
- C++ For C Programmers, Part A [click] on Mar, 2019.