PEDRO GIMENES

Hardware and Software Engineer

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EXPERIENCE

RTL Design Intern - GPU

Apple Inc.

April 2022 - September 2022 St Albans

- Realized features targeting large **performance gains** by implementing control logic to support extended **memory management** and **interrupt handling** requirements.
- Used **Sequential Equivalence Checking** tools to ensure logical equivalency of updated design variants. Also maintained automated **Clock Domain Crossing** testing to ensure data coherency across physical boundaries.
- Used **Formal Verification** tools comprehensively to accelerate feature bring up and minimize bugs ahead of RTL delivery.

Undergraduate Hardware Engineer - GPU Debug Infrastructure Team

Arm Ltd.

July 2021 – March 2022 Cambridge/Remote

- Developed internal Python libraries aimed at parsing and visualization of hardware simulation logs to identify **top-level** bugs.
- Contributed to the development of a Model/Emulator **GPU Testbench** aimed at increasing visibility of **FPGA Debug IP**.

PROJECT WORK

Regenerative Braking for Electric Vehicles

Imperial College Hyperloop

Jan 2021 – July 2021 London

- Led the development of a simulation framework for a Hybrid Energy Storage System enabling **regenerative braking** of a **Brushless DC Motor**.
- Leveraged simulation results to suggest changes in the circuit design which led to **efficiency improvements** of almost 10%.
- Presented this work at **European Hyperloop Week**, securing the **Top 5** shortlist for the **Electronics Award** after only 4 months of development.

Evermoore CPU: 1st Year Group Project

Imperial College

May 2020 - June 2020 London

- Formulated a 16-bit CPU architecture based on ARM to implement a **custom instruction set** optimised for some benchmark algorithms.
- Completed the Verilog implementation of a **call stack** and ALU containing a **custom multiplication block**, as well as an **assembler** written in C++.

EDUCATION

MEng in Electrical & Electronic Engineering

Imperial College London

2019 – 2023 London

- Current course average: 75.1%
  US equivalent: 4.0 GPA.
- **Dean's List Award (Top 10%)** in Year 3.
- A Levels: A*AA in Mathematics, Further Mathematics and Physics from OCR.

SKILLS

Programming Languages

SystemVerilog | Python | C++ | Bash/CSH/ZSH | Tcl

Libraries and Tools

SVA | UVM | Cadence Virtuoso | JasperGold | Vivado | Quartus Prime | Git/Gerrit | Perforce | Jenkins | TensorFlow/Keras

Foreign Languages

- Brazilian Portuguese: native fluency
- Italian: intermediate fluency (B1 level)

RELEVANT MODULES

Year 4

- Full-Custom IC Design
- Hardware & Software Verification
- Advanced Optimisation
- Computer Vision

Year 3

- Semiconductor Devices
- Digital Systems Design
- Deep Learning
- Control Engineering