Victor Isaac Torres Muro

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Summary

Pursuing a M.S. in Computer Engineering at Arizona State University. Currently performing research in computer vision, machine learning and FPGAs as a Research Assistant. Previous experience as a Manufacturing Engineer in the automotive industry. Seeking a full-time position starting Summer 2022.

Education

M.S. Computer Engineering – Arizona State University, Tempe, AZ August 2020 – May 2022

GPA: 3.9 / 4.0

Courses:

- Digital Systems and Circuits
- VLSI
- Neuromorphic Computing HW Design
- HW Acceleration and FPGAs
- Machine Learning
- Computer Vision
- Algorithms

Academic Projects:

- **Machine Learning: Object tracker –** Trained custom CNN to perform detection and classification of MNIST digits captured with an event camera.
- **Computer Vision: Denoising NN –** Trained UNet-based neural network to correct noisy images. Custom dataset generated by simulating photon-shot noise, read noise and ADC noise.
- **VLSI: Convolution + Max-pooling engine design** – Developed a convolution engine for deep learning applications and implemented on 7nm CMOS technology. Wrote behavioral System Verilog module, performed synthesis and place-and-route. Achieved clean DRC, LVS, and functional verification at every step.

B.S. Mechatronic Engineering – ITESM, Cd. Juárez, México August 2013 – May 2018

GPA: 94 / 100

Study Abroad semester: Hochschule Esslingen, Germany

Professional Experience

Research Assistant – Imaging Lyceum at ASU August 2020 – Current

- **Adaptive subsampling** – Implemented adaptive subsampling algorithm for efficient object tracking running accelerated deep learning models on a Xilinx FPGA board. Publication in review process.
- **Event camera object tracker** – Trained off-the-shelf neural network architectures to detect objects recorded by a neuromorphic (event) camera. Summer research project with Astrobotic for Space Force Small Business grant.

Product Coordinator – Robert Bosch GmBH August 2017 – October 2019

- Responsible for Manufacturing Engineering activities of Electronic Control Units (ECUs) and ultrasonic park-assist sensors.
- Managed engineering changes implementation on existing products without affecting production line downtime.
- Implemented product re-validation project to reduce aftermarket backlog by 90%, coordinating a cross-functional team.

Technical Skills

Programming: Python (Pytorch, Tensorflow, OpenCV), C++ (basic), Verilog, MATLAB-Simulink

Other applications: Linux, Git, Vitis AI, Vivado, AutoCAD, Solidworks

Awards

- **Fulbright-García Robles scholarship** – Binational sponsored grant to study master's degree in the US.