Maxx Tepper | Hardware Engineer

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Lead engineer responsible for the UCLA High Energy Physics Group's design of FPGA-based high-speed data processing cards for the CERN laboratory in Geneva, Switzerland

Technical Skills

- **Electronics Design:** OrCAD Capture CIS and Allegro; Experienced in the design of custom digital circuitry with FPGAs, high-speed optical transceivers, multi-GHz SerDes, DDR interface, clock networks, ethernet, USB 2/3, SATA, DisplayPort, UART, I2C, SPI, JTAG

- **Electronics Testing and Debugging:** Experienced in testing and debugging digital and analog circuitry using equipment such as oscilloscopes, function generators, DVM, and soldering

- **Programming and Software:** Experienced in C/C++, ROOT, MSOffice. Some experience in Python, CUDA, Bash, Git, LaTeX, SQL

Relevant Experience

Hardware Development Engineer **Los Angeles, CA**

UCLA High Energy Physics *August 2017–Present*

Responsible for the development of printed circuit boards following the AdvancedTCA specification for future upgrades to the CMS Barrel Muon Phase-2 trigger, organized and operated by CERN

- Worked with physicists and engineers to develop the system design and specifications
- Designed schematics and layout for a Xilinx Ultrascale+ FPGA, high-speed optical transcievers, DDR4 memory interface, and an ethernet switch, while meeting the standard for the AdvancedTCA specification
- Designed schematics and layout for prototype boards for all peripherals of FPGA listed above
- Tested and debugged prototype boards, iteratively making boards into a final working state
- Develop and upkeep embedded software framework for components such as power monitors and synthesizers
- Managed fabrication and assembly of prototype boards by facilitating all communications with manufacturers
- Setup test-benches, ordered equipment for the electronics lab space, and created and managed a CAD parts database using SQL (OrCAD Capture CIS)

Lab Assistant II **Los Angeles, CA**

UCLA High Energy Physics *August 2016–June 2017*

Responsible for generating a new particle physics lab space for a new professor, and for assisting in the Electronics for Physical Measurements course for undergraduates of physics

- Developed code for testing memory latency of GPU hardware, utilizing C++/CUDA libraries
- Purchased high-speed digital electronic equipment for research and development laboratory
- Assembled/disassembled and calibrated RF components for the Atlantic Impulsive Transient Antenna
- Assist students on build and diagnosing electronic circuits, along with testing and quizzing them on concepts as they work through the lab assignments
- Ensure supplies and equipment are prepared for each lab, ordering parts if necessary

Education

Bachelor of Science in Physics and Minor in Mathematics **Los Angeles**

University of California, Los Angeles, GPA: 3.2/4.0 *August 2013–December 2015*