

Trista S. Tookey

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OBJECTIVE

Dedicated software developer seeking a position where I can apply my programming knowledge and electronics experience alongside a team of professionals who share my passion for science and technology.

SKILLS

- Proficient in C/C++ programming
- Proficient VHDL hardware description language and Vivado Design Suite
- Proficient in computer networking (TCP, UDP, IB)
- Basic understanding of Python programming language and parallel computing
- Comfortable working with Windows or Unix operating systems
- Experience in electronics debugging and testing; software, firmware and hardware
- Experience in large dataset analysis and mathematical modeling
- Experience with various high energy physics experiment collaborations with partners across the US and Europe

WORK EXPERIENCE

SLAC (Stanford Linear Accelerator Center)
National Laboratory, Menlo Park, CA

August 2015 - Present

Software Developer, Technology and Innovation Directorate

- Development of software for the LCLS (Linac Coherent Light Source) data acquisition system with specific focus on optimal server-client event readout/request and monitoring
- Firmware development/testing using VHDL for the LCLSII upgrade; focusing on run control trigger and veto configuration as well as event timestamping
- Experiment collaboration at ANL (Argonne National Lab): Developed a standalone data acquisition system for a CSpad (Cornell-SLAC pixel array) detector and installed/ran at APS (The Advanced Photon Source) for an x-ray split and delay experiment
- Development of BLD (Beam Line Data) common platform design: Server/client model with event builder, event processor and EPICs (Experimental Physics and Industrial Control System) monitoring

University of Arizona's Department of Physics, Tucson, AZ

January 2015 - June 2015

Staff Technician for the Experimental Particle Physics Group

- Development of software for the CSC (Cathode Strip Chamber) muon system for the Run 2 of CERN's ATLAS experiment using both data driven and electronic strategies
- Tested electronics for the front-end system for Micromegas detectors, which are part of the ATLAS New Small Wheel upgrade. Typical tasks include electronics debugging, small firmware development and collecting and analyzing measurements to characterize the VMM2 ASIC, along with performing measurements using a small Micromegas test chamber

RESEARCH EXPERIENCE

Department of Planetary Sciences
Lunar and Planetary Laboratory, Tucson AZ
Physicist/Programmer

August 2014 - December 2014

- Demonstrated a correlation between weak interplanetary magnetic fields and less solar energetic particle (SEP) events in the current solar cycle
- Modeled the diffusive transport of impulsive energetic particle events through simulation
- Categorization of large SEP events and comparison of last two solar cycles

CERN (European Organization for Nuclear Research), Tucson, AZ June 2013 - July 2014
Physicist/Programmer

- Collected and processed CSC (Cathode Strip Chamber) data, computed and tested muon recalibration factors, reconstructed Z boson mass spectrum and evaluated performance/resolution for the ATLAS experiment at the Large Hadron Collider
- Assisted in building a MicroMegas detector for the purpose of testing readout electronics for the ATLAS 2015 muon spectrometer wheel upgrade

Large Synoptic Survey Telescope (LSST), Tucson, AZ
Astrophysicist/Programmer

August 2013 - May 2014

- Tested the accuracy of Bayesian photometric redshifting techniques for measuring distances to astronomical objects in simulations

Cosmology Independent Study, Tucson, AZ
Department of Astronomy and Steward Observatory

January 2013 - May 2013

- Astronomical image processing and gravitational lensing techniques
- Studied Primordial Cosmology and space-time diagram analysis

EDUCATION

College of Science
University of Arizona

Bachelor of Science in Physics
Minor: Mathematics

- Relevant Coursework: Computational Physics, Advanced Lab (I & II), Electricity and Magnetism, Mechanics, Thermodynamics, Optics, Advanced Applied Analysis, Astrophysics, Quantum Theory

PUBLICATIONS

Data Systems for the Linac Coherent Light Source
Journal of Applied Crystallography (2016) 49, 1363-1369