# Scott Phillips

CONTACT
INFORMATION

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in Scott Phillips
ⓞ ScottieJPhillips

RESEARCH
INTERESTS

High Energy Particle Physics, Electronics, Machine Learning, Data Analysis
Computational Physics.

EDUCATION

**University of California Santa Cruz**, Santa Cruz, California   **September 2023 – June 2025**
*B.S. Physics*

**Fresno City College**, Fresno, California                      **August 2021 – May 2023**
*A.S. Physical Science, A.S.-T Chemistry*

EXPERIENCE

**SCIPP**, University of California, Santa Cruz                   **November 2023 – Present**
*Pixel Detector Project Assistant, ATLAS Experiment at CERN*
- Ran thermal stress and power cycle tests on hybrid pixel sensors to assess long-term reliability.
- Built a custom acrylic jig for sensor positioning and stability during testing.
- Wrote and ran automated scripts to measure electrical performance with lab DAQ and power equipment.
- Created a simple terminal-based UI for controlling test hardware and tracking chip temperature and power.
- Assembled components in cleanroom environments, following ESD-safe and handling protocols.

**SCIPP**, University of California Santa Cruz                    **October 2024 – June 2025**
ⓞ *Gradient Based Learning of Photon Selection Cuts: Cuts as Biases in Networks*
- Built a custom neural network and loss function to optimize photon ID in ATLAS Monte Carlo data.
- Applied gradient descent to tune selection cuts directly, improving signal efficiency.
- Processed large datasets on SLURM-based HPC clusters at the University of Chicago.
- Investigated interpretability methods to study how cut-based biases shape network learning.

**Metiri**, Clovis, California                                   **May 2022 – Jan 2024**
*Technician/Analyst, Volatile Organic Analysis*
- Operated GC-MS systems for detecting volatile and semi-volatile organic compounds.
- Programmed SIM methods for targeted compound detection.
- Interpreted chromatograms and spectra to quantify pollutant concentrations.
- Performed QC and calibration within DoD and EPA guidelines.
- Drafted reports and reviewed data for regulatory submission.

HONOURS AND
AWARDS

UC Santa Cruz Deans Honor Award
Fresno City College Deans Honors Award
Clovis Community College Deans Honors Award

TECHNICAL
SKILLS

**Instrumentation**: Oscilloscope, power supply, multimeter, soldering (SMD + through-hole), DAQ systems, GC-MS, microscope work, vibration/thermal test jigs

**Software & Libraries**: Python, C++, ROOT, TensorFlow, Keras, NumPy, SciPy, Matplotlib, Git

**CAD & Hardware**: AutoCAD, 3D printing (FDM), PCB testing, TikZ circuit schematics

**Platforms**: Linux, GitHub/GitLab, SLURM HPC clusters