

# WILLIAM NASH

(413) · 539 · 3599 ◊ email: [wnash@cern.ch](mailto:wnash@cern.ch) ◊ website: [wnash.io](http://wnash.io)  
1409 S Saltair Ave ◊ Los Angeles, California, 90025

## WORK EXPERIENCE

---

### UCLA Physics Department / CERN

*PhD Candidate under Jay Hauser ([hauser@physics.ucla.edu](mailto:hauser@physics.ucla.edu))*

July 2016 - Present

*Los Angeles, CA*

- Conducting petabyte-scale data analysis utilizing LHC data and Monte Carlo simulation
- Developed mathematical techniques used for evaluation of systematic uncertainties
- Developed pattern recognition algorithm which improves muon position resolution by a factor of two
- Recabled muon chambers on the CMS Experiment within self-operated cherry picker
- Mentored and trained two undergraduate students

### Mevion Medical Systems

*Software Engineer I: Physics and Algorithms*

September 2015 - July 2016

*Littleton, MA*

- Designed and wrote data acquisition, data analysis and control system software
- Developed algorithms used for real-time position modulation of proton beams

### Mevion Medical Systems

*Physics Assistant*

June 2014 - September 2015

*Littleton, MA*

- Optimized and developed components of a 250 MeV proton synchrocyclotron
- Commissioned and verified radiation fields produced by models installed in hospitals
- Simulated and tested 800 ampere water-cooled dual-axis magnet prototype

### CERN

*Researcher under Lucie Linssen ([lucie.linssen@cern.ch](mailto:lucie.linssen@cern.ch))*

February 2013 - September 2013

*Geneva, Switzerland*

- Wrote particle tracking code used to calibrate novel W-DHCAL hadronic calorimeter
- Wrote algorithm which matched muon data to simulation over full energy range of 10 – 300 GeV

## EDUCATION

---

### UCLA

PhD in Physics

*Expected March 2022*

### Boston University

BA in Physics (*cum laude*)

Member of Sigma Alpha Mu

*May 2014*

## ACTIVITIES

---

### Volunteering

CERN Open Days 2019, Explore Your Universe 2018, 2017

## TECHNICAL STRENGTHS

---

### Computer Languages

Python, C/C++, Unix, Markdown, LaTeX, CSS, Java

### Programs

numpy, git (w/ CI), matplotlib, pandas, scipy, numba, tensorflow, ROOT

### Languages

Limited working proficiency of French

## PUBLICATIONS

---

### CMS Author

Feb 24, 2019 - Present

W. Nash, C. Grefe, “Beam Profiling through Wire Chamber Tracking”, LCD-Note-2013-009, 2013