Joshua Lin

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EDUCATION

UC Berkeley Senior *August 2016 - Current*

B.A. Physics, Mathematics (Double Major) - Class of 2020
GPA: 3.99/4.00 , Physics GPA: 4.0/4.0, Math GPA: 4.0/4.0

PUBLICATIONS

Boosting $H \to b\bar{b}$ with Machine Learning *July 2018*

https://arxiv.org/abs/1903.02556
Published in Journal of High Energy Physics

Machine Learning Templates for QCD Factorization in the Search for Physics Beyond the Standard Model *March 2019*

https://arxiv.org/abs/1903.02556
Published in Journal of High Energy Physics

RESEARCH EXPERIENCE

Condensed Matter Thesis *Fall 2019 - Current*

Working with professor Joel Moore at UC Berkeley on studying topological states of matter, trying to generalise exactly soluble lattice models introduced by Kitaev.

HEP research at LBNL *Fall 2017 - Current*

Focusing on developing machine learning algorithms for application to High Energy Physics at the Lawrence Berkeley National Laboratory. A paper in preparation on Lie Group applications in Machine Learning.

Summer Undergraduate Research Fellowship *May 2018 - August 2019*

Investigating Kac-Moody algebras under a fellowship supported by UC Berkeley.

NERSC Summer Internship *May 2018 - August 2018*

Worked with researchers at the National Energy Research Scientific Computing Centre, home to one of the largest supercomputer clusters Cori, on applying Machine Learning to High Energy Physics phenomenology.

Research in Geometric Modeling *Jan 2017 - May 2017*

Focused on creating a program to model geometrical sculptures by focusing on topological aspects of the sculptures such as its orientability and borders.

AWARDS AND HONOURS

Isidore Pomerant Endowment Fund *Fall 2018*

Cal Alumni Leadership Scholarship *Fall 2016*

International Physics Olympiad, Bronze Medal *2015*

Represented Australia on the International Stage in Mumbai, India

Asian Physics Olympiad, Silver Medal *2015*

Represented Australia on the International Stage in Hangzhou, China

Top 10 % Putnam Math Comp. *Fall 2016, Fall 2017*

TALKS AND PRESENTATIONS

Lawrence Berkeley National Lab ATLAS Group Annual Meeting *Jan 2018*

Classification of $gg \to gh$ against $qg \to qh$, slides available:
ocf.berkeley.edu/~joshuazlin/about/beamer.pdf

Larence Berkeley National Laboratory HEP-ML group *May 2018*

Searching for Boosted Higgs $\to b\bar{b}$, slides available:
ocf.berkeley.edu/~joshuazlin/about/beamer2.pdf

NERSC Sumnmer intern poster session *July 2018*

Boosting Higgs $\to b\bar{b}$ measurement with ML, poster available:
ocf.berkeley.edu/~joshuazlin/about/poster.pdf

SUSY 2019 Conference *May 2019*

The 27th International Conference on Supersymmetry and Unification of Fundamental Interactions
indico.cern.ch/event/746178/contributions/3389040/

FURTHER ACADEMIC ACTIVITIES

Grader for UC Berkeley classes *Spring 2018, Fall 2018*

Honors Complex Analysis, Spring 2018 (Professor Hadfield).
Quantum Mechanics, Fall 2018 (Professor Siddiqi)
General Relativity, Spring 2019 (Professor Ganor)

Directed Reading Programs *Sp 2017, Sp 2018, Fall 2018*

Alg. Topology with K. Miller. (Talk about Myer Vietoris)
Solid State with A. Aikawa (Talk about BCS Theory)
TQFTs with Kiran Luecke. (Talk about Operads)
Low Dimensional Topology with Ethan Dlugie