

Mohit Srivastav

Curriculum Vitae

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Ph.D. Student at Johns Hopkins University

Education

2022

Ph.D. Candidate, Johns Hopkins University (JHU)

Advisor: Professor Andrei Gritsan

2018–22

B.S. Physics, B.A. Computer Science, University of Virginia (UVA)

Highest Distinction in Physics, High Distinction in Computer Science with [Thesis](#)

2014–18

IB & Advanced Diploma, South Lakes High School

Publications

CMS Collaboration. Measurement of the higgs boson mass and width using the four-lepton final state in proton-proton collisions at $\sqrt{s} = 13$ TeV, 2024.

Experience

Analysis Work

2023

Off-shell Higgs Boson, *CMS Joint 4-Lepton Study Team (CJLST)*

- Produced constraints on the mass and width of the Higgs Boson, as well as anomalous Higgs Boson couplings, with the CMS detector at CERN [1]
- Working on the κ Framework extension included in the CMS Higgs Grand Combination
- Working on new off-shell analysis examining Higgs production modes in the off-shell region

2022

Spin-Parity Analysis of a Tetraquark Candidate, *CMS B-Physics*

- Finding the spin and parity of 3 low-mass resonances which constitute a candidate for a tetraquark, a new type of matter
- BPH-24-002 in progress

2020–22

Optimizing Cuts for Experimental Dead-time, *Mu2e Collaboration*

- Utilized machine learning to minimize experimental deadtime at high beam intensities
- Studied the aging of test-stand di-counters for particle detection
- Culminated in my Distinguished Majors Interdisciplinary [Thesis](#) in Computer Science

Technical Work

2023

Parton Showering and Filtering, *CJLST*

- Worked in conjunction with experts to establish better parton showering for off-shell Higgs Boson simulation to better match data
- Produced a better filter for the 4-lepton channel to be used in off-shell Higgs Boson simulation

2022

JHUGen/JHUGen-MELA Development, *Johns Hopkins University*

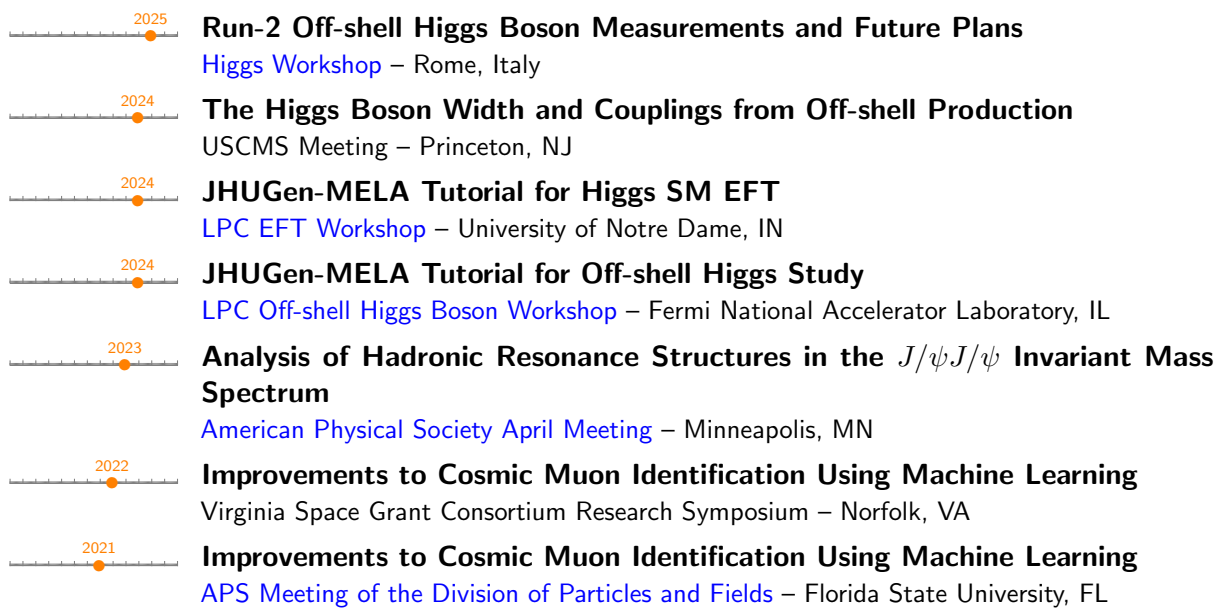
- Developer for the [JHUGen Package](#), which includes a Monte Carlo generator as well as a reweighting scheme
- Created new Python bindings using PyBind11 to release a version of JHUGen-MELA in Python
- Writing [documentation](#) for the JHUGen-MELA package utilizing Doxygen
- Version 7.5.7 released Dec. 20, 2024

2022

CMS Tracker Alignment, *Tracker Alignment Group*

Provide alignments for the CMS tracker and validate performance over time

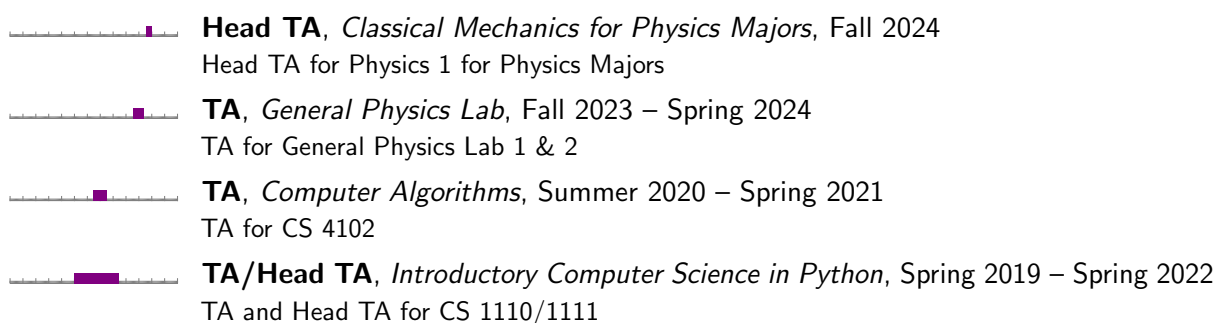
Conference Talks & Posters



Awards and Honors



Selected Teaching Experience

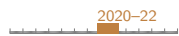


Other Experience



Fitness Monitor, *Ralph O'Connor Rec Center*, JHU

Helped manage facilities, play music, and interact/help patrons at the gym



Writer, *The Yellow Journal*, UVA

Collaboratively wrote articles and headlines for the Yellow Journal, the University of Virginia's satirical publication



Treasurer, *International Relations Organization*, UVA

Managed taxes and finances on the order of \$30k for the 501c3 International Relations Organization at the University of Virginia