Guillermo A. Fidalgo Rodríguez

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Objective

Acquire a fellowship or job opportunity to supplement my education, expand my knowledge and help strengthen my academic preparation for graduate school.

Education

UNDERGRADUATE | 2020 | UNIVERSITY OF PUERTO RICO MAYAGUEZ (UPRM)

- Major: Theoretical Physics
- Minor: Applied Mathematics
- Member of the Society of Physics Students
- President/Founder of the Scientific Software Club at UPRM

GRADUATE | UPRM | PRESENT

- Emerging Jets Analysis (Master Thesis, work in progress)

Experience

PUBLISHED PAPERS

- *"Broadening the scope of Education, Career and Open Science in HEP"* - arXiv:2203.08809 [physics.ed-ph]
- *"Particle Physics Outreach to K-12 Schools and Opportunities in Undergraduate Education"* - arXiv:2203.10953 [physics.ed-ph]
- *"Facilitating Non-HEP Career Transition"* - arXiv:2203.11665 [physics.ed-ph]
- *"U.S. CMS - PURSUE (Program for Undergraduate Research SUmmer Experience)"* - arXiv:2209.10109 [physics.ed-ph]
  - Acknowledged for tutoring interns about HEP software tools

SOFTWARE TRAINING AND OUTREACH ACTIVITIES

- **Mentored in the following:**
  - HSF/IRIS-HEP Software Basics Training (Virtual) **September 28-30, 2022** [Link]
  - "DANCE@Snowmass" (University of Washington, Seattle, USA) **July 19-23, 2022** [Link]
  - "Software Carpentry" (Virtual) **July 13-15, 2022** [Link]
  - "Matplotlib Training" (Virtual) **April 21-22, 2022** [Link]
  - "Software Carpentry" (Virtual) **March 28-30, 2022** [Link]
  - "Data Analysis for Lab Research" (UPRM, Puerto Rico) **March 5, 2022** [Link]
  - "Software Carpentry" (Virtual) **Dec 13-15, 2021** [Link]
- **Developed organized and mentored the following:**
  - "Python 101 for STEM Teacher" (UPRM, Puerto Rico) **August 20, 2022** [Link]
  - "Python 101 for STEM Teachers @CROEM" (CROEM, Mayagüez, Puerto Rico) **August 17, 2022** [Link]
  - "Astronomy Course for CROEM high school students" (Virtual) **Jan - May 2021** Complemented the programming side of an introductory course of Physics and Astronomy with Python programming and exercises for local high school students.
  - "2020 STEM Teachers Workshop" (Virtual) **15-16 July 2021** Workshop dedicated to enabling K-12 teachers with python coding language. [Link]
  - "Machine Learning Basics for STEM Teachers" (Virtual) **February 13-14, 2021** [Link]
  - "Data Analysis for STEM Teachers" (Virtual) **July 15-16, 2020** [Link]
  - "Introduction to python programming for Undergrads" (UPRM, Puerto Rico) **22 February 2020** Workshop intended to teach local Physics students with python coding language with HEP applications. [Link]
  - "Scientific Software Club (SSC)" **Founded in August 2019** Formed the Scientific Software Club at UPRM to bring together students interests in software related research projects. Have given around 5 workshops including topics: Bash, Git and Python. Currently have over 100 members and growing.
  - "STEM Teachers Workshop" (UPRM, Puerto Rico) **3-4 June 2019** Workshop dedicated to enabling high school STEM teachers with coding. [Link]

CONFERENCE PRESENTATIONS

1. *"Teaching Python the Sustainable Way: Lessons Learned at HSF Training"* at PyHEP 2022 Workshop (Virtual) **September 12, 2022** [Link]
2. *"PyROOT tutorial experience from SWC Workshop"* at 12th ROOT Users' Workshop (Virtual) **September 12, 2022** [Link]
3. *"New Trigger Studies for Emerging Jets at CMS Experiment"* at PRIMS/JTM Conference (Humacao, Puerto Rico) **April 9, 2022** [Link]
4. *"Recent Progress in ML for Tracker DQM"* at DPF Conference (Virtual) **July 12, 2021** [Link]
5. *"Machine Learning in DQM at CMS Experiment"* at Physcon Conference (Rhode Island, USA) **November 13-17, 2019** [Link]
6. *"Machine Learning and Deep Neural Networks at CMS Experiment"* at Physics symposium (University of Puerto Rico Mayagüez) **May 24, 2019** [Link]
7. *"Machine Learning in DQM at CMS Experiment"* at PRISM/JTM Conference (Mayagüez, Puerto Rico) **May 4, 2019** [Link]
8. *"Using ML techniques for DQM at CMS"* at ML Hackathon (University of Puerto Rico Mayagüez) **April 25, 2019** [Link]
9. *"Machine Learning in DQM at CMS Experiment"* at FNAL 51st Annual Users Meeting and New Perspectives Meeting (Fermilab, Batavia, IL, USA) **June 18, 2018** [Link]

Leadership

TREASURER | SOCIETY OF PHYSICS STUDENTS (UPRM-CHAPTER) | JANUARY 2017-2018

- Acting Treasurer of the SPS UPRM Chapter-in charge of managing the chapter's finances, sales, and membership enrollment.

SPS DEMONSTRATIONS COMMITTEE

- I have experience presenting to local high school students and to the general public essential topics in physics such as: Conservation of Energy, Conservation of Momentum, Torque, Atmospheric Pressure and Electromagnetism.

PRESIDENT/FOUNDER | SCIENTIFIC SOFTWARE CLUB | AUGUST 2019 – 2020

- In the summer of 2019, I founded the first software society registered under the physics department. This club is focused on education and application of software used in STEM research in hopes that it will complement every physics undergrad's academic career.
- Trained students in Linux, Git and Python via workshops focusing on best practices with material inspired by Software Carpentries
- Website - Scientific Software Club - UPRM

Skills & Abilities

- Proficient in MATLAB/Octave and Python
- PyROOT
- Proficient in making documents and presentations with *LaTeX*
- Basic knowledge of Linux software/commands
- Comfortable working with Git/GitHub/Gitlab
- Fluent in English and Spanish
- Knowledgeable in web development with following tools:
  - Jekyll
    - Personal Website: https://guillermofidalgo.github.io/
  - Google Sites
    - U.S. CMS PURSUE: https://sites.google.com/upr.edu/uscms-pursue/
    - SSC Website: https://sites.google.com/upr.edu/ssc-uprm/home