Salvatore Zerbo

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EDUCATION

Drexel University
Philadelphia, PA
Sep 2014 – Jun 2019

BACHELOR OF SCIENCE IN PHYSICS

- Minors in Astrophysics and Mathematics
- **Cumulative GPA: 3.87**

HONORS & AWARDS

- Dean's List   Sep 2014 – Jun 2019
- A.J. Drexel Scholarship   Sep 2014 – Jun 2019
- Drexel Dragon Award   Sep 2014 – Jun 2019
- First Honors   May 2019
- STAR Scholar   Jun 2015 – Sep 2015

NOTABLE & RELEVANT COURSEWORK

- **Graduate:**
  - Dynamics **|** General Relativity
- **Undergraduate:**
  - Cosmology **|** Galactic Astrophysics **|** Observational Astrophysics
  - Particle Physics **|** Discrete Event Simulation **|** Numerical Analysis

SENIOR THESIS

- **Title:** Development of a Low Energy Neutron Source for Bubble Chamber Calibrations
- **Advisor:** Professor Russell Neilson

EXPERIENCE

Drexel University
Philadelphia, PA
Apr 2017 – Mar 2018
Oct 2018 – Jun 2019

RESEARCH ASSISTANT

- Designed a gui in Python for viewing and fitting bubble chamber data
- Designed and simulated a low energy neutron source for calibrations using GEANT4 as part of my senior thesis
- Aided in construction and performed routine maintenance and operation of prototype bubble chamber for dark matter detection

University of Pennsylvania
Philadelphia, PA
Apr 2018 – Sep 2018

RESEARCH ASSISTANT

- Simulated self-interacting dark matter models using n-body simulations in GADGET on the NERSC computing cluster
- Wrote scripts for setting up initial condition states and performing data analysis in Python
- Discovered and analyzed issues with the setup of the initial condition states

Temple University
Philadelphia, PA
Mar 2016 – Sep 2016

RESEARCH ASSISTANT

- Designed a gui in MATLAB for calculating film thickness and optical properties using acquired Ellipsometer data
- Prepared and grew superconducting MgB_2 thin films
- Collected and analyzed data on superconducting films for desired properties

Drexel University
Philadelphia, PA
Jun 2015 – Oct 2015

RESEARCH ASSISTANT

- Developed an algorithm for combining overlapping void regions into single spheroid object
- Converted SDSS data for visualization using Python and MATLAB
- Created 3D visualizations of voids and galaxies for analysis using VisIt

SKILLS

Python **|** MATLAB **|** C# **|** LaTeX **|** Simulations **|** Data Modeling & Analysis **|** Bash **|** Linux **|** Git **|** Racket **|** Debugging

ACTIVITIES

Drexel University

CLUBS

- Track Club   Sep 2014 – Mar 2019
  - Travel Coordinator   Sep 2018 – Mar 2019
  - Vice President   Dec 2017 – Jun 2018

PUBLICATIONS

M. Bressler et al. 2019. A buffer-free concept bubble chamber for PICO dark matter searches. JINST, submitted. arXiv: 1905.07367