Stefan Arseneau

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Phone: (571) 488-0060
Citizenship: United States

Research interests

Cosmology, experimental astrophysics, observational astrophysics, pure mathematics

Education

Johns Hopkins University — Baltimore, Maryland
BS in Physics and Pure Mathematics — Aug 2020 – Present
GPA: 3.75.

Selected coursework

- Physics: Classical Mechanics, Electricity and Magnetism, Differential Equations, Special Relativity & Waves
- Mathematics: Honors Analysis I, Honors Linear Algebra, Intro to Topology

Research experience

CLASS Telescope - Experimental Cosmology

Mentors: Tobias Marriage (Johns Hopkins) — September 2020 – Present

My current work consists of carrying out experiments to determine the efficiency an utility of polyimid aerogel as a filtering material in cosmic microwave background telescopes with Tom Essinger-Hileman (NASA Goddard). This involves working with cryogenics and lab techniques as well as CAD and machining work.

Previously I performed analyses of signal biases induced by azimuthal telescope motion working in time and frequency domains applying masks and using k-means deep learning algorithms to minimize bias.

Hypersonic Air-Breathing Propulsion Group

Mentors: Robert Baurle (NASA Langley) — June 2018 – August 2018

Performed computer modeling simulations and developed validation cases for VULCAN-CFD (Linux-based NASA software for modeling computational fluid dynamics.

Medzhitov Lab

Mentors: Ruslan Medzhitov (Yale University) — June 2019 – August 2019

Researched the receptor for the $RELM-\alpha$ protein working with 3T3L1 cell lines in a wet lab environment.

Industry experience

Thrugreen, LLC

Data Scientist — June 2021 – July 2021

Working with large datasets to utilize machine learning algorithms in AWS to develop intelligent solutions to optimize the flow of traffic through intersections.

Skills

Programming

Proficient in: Python, Jupyter, Bash shell, Linux systems.
Familiar with: Java, C++.

Skills

Solidworks, COMSOL, Additive Manufacturing, CNC milling, Cryogenic Soldering

Languages

English (fluent), Mandarin (intermediate)

Service and outreach

Johns Hopkins Outdoor Club — March 2021 – Present

Climbing instructor, responsible for leading trips. Trained in land navigation, leadership, and crisis management.