

# Statement of Purpose

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I applied for UCSC in 2017 under the School of Engineering as a computer science (CS) student. In my first year, however, I discovered a passion for physics and enrolled instead as an Applied Physics major, converting my former CS major into a minor. Since then, I have been planning to pursue a Master's level education.

My first experience with graduate-level studies was 212 Electromagnetism 1, where I was exposed to the pace of graduate school and grew an appreciation for the different applied, computational and mathematical treatments of physics. I earned my first A in a graduate class and, more importantly, proved to myself that I am capable of this level of study.

In 2020, I began a research internship under the advisement of Nicola Omodei on the spectral evolution of extragalactic background light (the ambient starlight of the galaxy) using Gamma Ray Burst data from the Fermi Large Area Telescope. The experience taught me a great deal about astronomy, particle physics, programming, statistical analysis, machine learning and, personally, how to quickly learn, interpret and apply new physics concepts. Following the completion of that project, I have transitioned into a paid position developing the threeML software package (which I gained familiarity with through my previous project) by squashing bugs, building new functionalities and developing data analysis infrastructure for the Imaging X-ray Polarimetry Explorer satellite telescope which launches fall of this year.

I am regularly excited to learn more physics, as my studies more closely align with my work and I see its potential – and my own – continue to unfold. This is the reason why I want to earn a Master's degree education in physics at UCSC. As a result of my intersecting backgrounds, I'm concentrating on the computational side of physics, with a particular interest in the analysis of astrophysical data. Every step of my journey has been an effort of passion and it's with this same certainty that I am pursuing entry to this program. Thank you for considering my application for admission to the graduate physics program.