

# Kian Orr | Curriculum Vitae

(949) 456-3409 | [kianorr@g.ucla.edu](mailto:kianorr@g.ucla.edu) | [kianorr.com](http://kianorr.com) | [github.com/kianorr](https://github.com/kianorr)

**Research interests:** Fusion | Plasma astrophysics | Magnetohydrodynamic and particle in cell simulations | Experimental plasma diagnostics

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## Education

**University of California, Los Angeles (UCLA)**

2020 - 2022

- Bachelors of Science in Physics; 3.52 GPA

**Irvine Valley College (IVC)**

2018 - 2020

## Research and Work Experience

**TAE Technologies | Jr. Scientist**

June 2022 - present

- Spectroscopic measurements of plasma in TAE's fusion device (C-2W)
- Fully redeployed a high-resolution spectrometer diagnostic, entailing calibration and data analysis
- Beginning redeployment of x-ray spectrometer diagnostic
- Inferences of spectroscopic data, including velocities, temperatures, and confinement times
- Creation of a post shot processing code for a spectrometer used by TAE scientists
- Implementing machine learning to predict electron density and temperature in C-2W

**UCLA Large Plasma Device (LAPD) | Student Researcher for Troy Carter**

August 2021 - October 2022

- Implemented survey spectrometer on LAPD and presented poster at APS DPP 2022
- Modeled observed data with synthetic spectra, resulting in discovery of impurities in the LAPD
- Created a server and client, along with a graphical user interface for the control room

**Particle in Cell (PIC) Simulation**

May 2022 - June 2022

- Created a 1D electrostatic particle in cell code from scratch
- Demonstrated two stream instability

**Acoustics Simulation**

Sept 2019 - Nov 2019

- Simulated sound distribution in a concert hall
- Presented at IVC Symposium and invited to UCI's transfer conference

## Teaching

**IVC | Tutor**

Oct 2019 - Dec 2021

- Tutor for math and physics; requires a succinct way to communicate ideas

## Awards

**Best Abstract Award | HTCC**

May 2020

## Conferences

### APS Division of Plasma Physics 2022 | Poster presenter

*October 2022*

- *Survey Spectroscopy in the Large Plasma Device*

### UCI Honors Transfer Conference (HTCC) | Selected talk

*May 2022*

- Invited but cancelled due to COVID-19

### IVC Symposium | Selected talk

*November 2019*

- *Acoustics of Concert Halls*

## Skills

### Programming

- Python, Julia, Matlab, C++, Mathematica, ROOT
- Knowledge of numerical methods
- Familiarity with EPOCH PIC code

### Languages

- English: fluent
- Swedish: intermediate