

# RYAN HANNIGAN

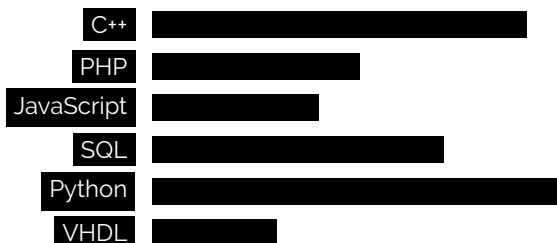
Data Scientist

📍 South Austin  
☎ +1 832 465 1323  
✉ ryan@hannigan.xyz

🌐 hannigan.xyz  
🐙 github.com/rhanniga  
🐦 @astrophysiic

## WHO AM I?

Particle physics PhD fellow at the University of Texas at Austin. Data scientist/software developer for the ALICE experiment at CERN. Current work involves writing firmware and software for the 2021 LHC hardware upgrade, but my analysis topic involves strange-antistrange angular correlations in p-Pb collisions at ALICE. Mostly interested in data science with emphasis on machine learning.



## EXPERIENCE

2017 – present

### Data Scientist

ALICE at CERN

Analyzed proton-lead data from the Large Hadron Collider (LHC) to investigate two dimensional angular correlations between strange and anti-strange quark pairs, which is pertinent to understanding Quantum Chromodynamics (QCD). Analysis on the grid mostly performed using (Ali)ROOT, while offline analysis utilized Jupyter notebooks.

C++ / ROOT / Python

2015 – 2019

### Software/Firmware Developer

ALICE at CERN

Developed firmware and software for ALICE detector upgrade. Wrote VHDL to add detector health modules to readout hardware, and wrote Python/C++ to test the readout hardware and characterize the detector parts as they were being assembled.

C++ / QT / Python / VHDL

2018 – 2019  
part time

### Web Developer

UT Austin

Developed both the frontend and backend of a website with a SQL database used to store testing information for readout equipment being built for ALICE ITS upgrade. Utilized both encryption and password authentication for security purposes.

HTML / PHP / JS / mySQL

## EDUCATION

2017 - 2022

### Doctorate Degree

University of Texas at Austin

Currently in 5th year of PhD program. Working towards a PhD in Relativistic Heavy Ion Physics/Nuclear Physics. Recipient of Graduate Provost's Excellence Fellowship, valued at over \$240,000. Current completed courses include General Relativity, QFT, Physics of Sensors and all core courses.

2012 – 2017

### Bachelor's Degree

University of Houston

Received BS in both Physics and Mathematics at the University of Houston. Graduated Magna Cum Laude, and was #1 in the Physics Department. Advanced physics courses included Astrophysics, Quantum Field Theory, Devices and Sensors. Advanced math courses included Advanced Linear Algebra, Advanced Partial Differential Equations, Numerical Analysis.

## LEADERSHIP

**Teaching Assistant** 2018-2019, UT  
**Physics Lecturer** 2017, UH  
**Math Facilitator** 2016-2017, UH  
**Physics Facilitator** 2014-2017, UH

## HOBBIES

I love playing video games (mainly CS:GO), working out, playing piano, coding, and I'm a huge fan of math puzzles or riddles. I also enjoy learning new things about Vim, the greatest text editor.

## FUN FACTS

I currently play for the UT Varsity CS:GO team and am the only graduate physics student in the entire league. I also have synesthesia, so I hear colors.