Eric Coughlin

Curriculum Vitae - December 27, 2019

Education

2014-2018 **Bachelor of Arts-B.A.**, *Luther College*, Decorah, IA, Computer Science.

2014–2018 **Bachelor of Arts-B.A.**, *Luther College*, Decorah, IA, History.

Experience

Vocational

July 2018-present **Software Integration Specialist (Software Engineer I)**, *LSST/AURA*, Tucson, AZ->La Serena, Chile.

Worked under the direction of Dr. Patrick Ingraham, PHD, developing software for the Telescope and Site team of LSST. Worked under Software Team manager to help integrate and operate software for the telescope. Moved to La Serena, Chile to continue work on telescope.

- Developed python wrapper APIs for controlling hardware for several vendor provided hardware such as an Ekspla Tunable Laser, Colimated Beam Projector and Zaber Linear Stage
- Developed software in python using an internal SDK for creating remote control communication for hardware using DDS protocol.
- Worked under a team using Agile workflow.
- Tested integration of hardware and control software
- Tested integration of hardware and the team's middleware layer.
- Participated in night-time observation software support
- Learned new technologies such as Docker for development.

Research

July 2017-August 2017 **Visiting Undergraduate Research Fellow**, *Harvard University*, Cambridge, MA.

Worked under the direction of Dr. Christopher Stubbs, PHD, updating a python package and writing Text User Interface for controlling lab instruments. Gained experience working with lasers.

May 2016-July 2016 **Visiting Undergraduate Researcher**, *MIT*, Cambridge,MA.

Worked under the direction of Sebastien Biscans in order to maintain a python package SeisMon which monitored the seismometers of the LIGO interferometers. I also wrote a basic Machine Learning implementation which would potentially give the best factors for determining the cause of lockloss.

June 2015-September 2015 **Visiting Undergraduate Researcher**, *Carleton College*, Northfield, MN.

Worked under the direction of Dr. Nelson Christensen, writing python scripts to analyze wavelength data and help determine the best fits.

– La Serena, Chile
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Awards

Luther College

Fall 2014-Spring 2018 — Presidential Scholarship

Fall 2014 — Dean's List

Computer Skills

Python — **Intermediate**

C++ — **Novice**

Java — **Novice**

Javascript — **Novice**

Clubs & Organizations

National & International

September 2016-present — **Member**, *Phi Alpha Theta*.

June 2015-March 2018 — **Member**, *LIGO Scientific Collaboration*.

Luther College

September 2017-May 2018 — **Co-President**, *Lambda Omega Chapter of Phi Alpha Theta*, Decorah, IA.
Helped lead board meetings with other officers and organized several events for the organization

September 2016-May 2018 — **Member**, *Lambda Omega Chapter of Phi Alpha Theta*.

February 2017-May 2018 — **Member**, *Luther American Marketing Association*.

Languages

English — **Native Proficiency**

German — **Elementary Proficiency(R-1,S-1,W-1)** *Estimated ILR scale*

Spanish — **No Proficiency(R-0+,S-0,W-0)** *Estimated ILR scale*

Publications

[1] B.P. Abbott et al. "Full band all-sky search for periodic gravitational waves in the O1 LIGO data". In: *Physical Review D* 97.10 (2018).

[2] B.P. Abbott et al. "Search for Tensor, Vector, and Scalar Polarizations in the Stochastic Gravitational-Wave Background". In: *Physical Review Letters* 120.20 (2018).

[3] P.B. Covas et al. "Identification and mitigation of narrow spectral artifacts that degrade searches for persistent gravitational waves in the first two observing runs of Advanced LIGO". In: *Physical Review D* 97.8 (2018).

[4] B.P. Abbott et al. "All-sky search for periodic gravitational waves in the O1 LIGO data". In: *Physical Review D* 96.6 (2017).

[5] B.P. Abbott et al. "Directional Limits on Persistent Gravitational Waves from Advanced LIGO's First Observing Run". In: *Physical Review Letters* 118.12 (2017).

[6] B.P. Abbott et al. "Upper Limits on the Stochastic Gravitational-Wave Background from Advanced LIGO's First Observing Run". In: *Physical Review Letters* 118.12 (2017).

[7] M. Coughlin et al. "Limiting the effects of earthquakes on gravitational-wave interferometers". In: *Classical and Quantum Gravity* 34.4 (2017).

References

References available upon request.