Lee Christina

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albi3ro.github.io/M4
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education

bs | physics
caltech | 2014

projects

m4 albi3ro.github.io/M4
Julia Jupyter notebook tutorials

plots.jl examples
Notebooks on the Plots.jl package

teaching

oist | skill pills
Sep 2018: Inkscape
Jul 2016: Inkscape
Mar 2016: Gravitational Waves
Jan 2016: LaTeX

skills

communication
Science Writing
LaTeX
Inkscape
Blender
HTML, CSS
hugo, jekyll

programming
Julia
Python
C++

numerical methods
Monte Carlo Methods
Exact Diagonalization
Differential Equations
Optimization

mathematics
Topology
Complex Analysis
Differential Equations
Differential Calculus
Fourier Analysis
Group Theory

positions

research assistant | okinawa institute of science and technology
september 2017-september 2018
Examined how to create a Chern Insulator in a ferromagnet with magnons by using the spin-orbit Dzyaloshinskii-Moriya Interation.
- Used Holstein-Pirmakoff transformation
- Solved semi-infinite strip for protected edge modes
- Calculated anomalous thermal conductivity

may 2015-december 2017
- Worked with the isotropic Kitaev honeycomb model
- Solved on finite sized lattice using SVD

may 2014-may 2015
Research Rotations
- Monte Carlo Methods for Spin Ices and Ferromagnets
- Studied computational methods in the biological sciences
- Simulated trapping cold atoms around optical nanofibers with red and blue detuned light

summer undergraduate research fellowship | caltech
summer 2011
Testing General Relativity Using a Continuous Gravitational Wave from a Rapidly Rotating Neutron Star with Prof. Alan Weinstein
- Took alternate theories predicting different types of gravitational waves
- Simulated waves and mimicked LIGO's data analysis procedure
- Determined how sensitive LIGO was to these changes in waveform and timing

summer undergraduate research fellowship | caltech
summer 2010
Planning an Exoplanet Survey of Intermediate Mass Red Giants in Open Clusters with Prof. John Johnson
- Searched literature and databases for open cluster candidates
- Determined own estimate for age, mass, distance, and metalicity of clusters and stars
- Used simulated annealing method to determine optimum distribution of telescope time and its efficiency

apprenticeships in science and engineering | portland state university
summer 2007
Analyzed data from capillary action experiments on the International Space Station

talks

juliacon 2017 | lightning talk
"Teaching With Code"
https://youtu.be/8O_wcYLAMWw

posters

highly frustrated magnetism | uc davis 2018
"Magnetic Analogue of the Haldane Honeycomb Model"
Selected for extra time and special attention

school in computational condensed matter physics | ictp 2015
"Monte Carlo Simulations of Spin Ice"

frustration, disorder and localization | ictp 2015
"Monte Carlo Simulations of Spin Ice"

coherent quantum dynamics | oist 2014
"Monte Carlo Simulations of Spin Ice"

leadership and outreach

oist open campus 2015, 2017 Geology Booth Lead

conference for undergraduate women in physics, caltech 2013
Webmaster

board of control representative Honor code enforcement 2012-2013

health advocate for dormitory Caltech 2010-2013

event coordinator Caltech Christian Fellowship 2010-2011

awards

National Jack Horkheimer Award for Service in Astronomy	2008
ADP sponsored National Merit Scholarship	2009-2013
Robert C. Byrd Honors Scholarship	2009-2013
Schaaf Family Scholarship	2009-2010
Alcorn Scholarship	2010-2011