Hieu Le

Curriculum Vitae

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Education

Bachelor of Science, Physics and Mathematics

2015 - expected 2019	**Dickinson College**, Carlisle, PA
Thesis	*Numerical Analysis of Nonlinear Localized Modes in Vibrational and Magnetic Lattices.*
Advisor	Dr. Lars English

Summer 2018 US Particle Accelerator School

2018	**Michigan State University**, East Lansing, MI
Topic	*Fundamentals of Accelerator Physics and Technology with Simulations & Measurements Lab.*

Experience

Research Assistant, *Dickinson College*

08/2018 - present — Dr. Lars English, Department of Physics and Astronomy

Numerical Analysis of Nonlinear Localized Modes in Vibrational and Magnetic Lattices.

- Use Newton-Raphson to find numerically exact spatially localized modes for various vibrational and magnetic lattice Hamiltonians in 1-D and 2-D at nonlinear frequencies.
- Evolve solutions in time with RK4 algorithm to evaluate long term behaviors.

Lee Teng Undergraduate Fellow, *Fermilab*

05/2018 - 08/2018 — Dr. Elvin Harms, Accelerator Division

Performance Characterization of LCLS-II Superconducting Radiofrequency Cavities.

- Developed tools in R to process and analyze data from Fermilab's ACNET servers, which include data wrangling tools, a web application for data visualization and model fitting tools.
- Used nonlinear least squares to fit the Fowler-Nordheim equation and other models to cryomodule field emission and dark current test data.

Research Assistant, *Dickinson College*

07/2017 - 08/2017 Dr. Laura Watson, Department of Physics and Astronomy
Construction of a Comprehensive Catalogue of Possible Cosmic Topologies.

- Examined, verified and corrected terms that characterize the topology through its restrictions on the eigenmodes allowed in spaces for a catalog of flat topologies and more.
- Created a program in C++ to visualize and represent different flat topological configurations.

Awards & Honors

2018	Sigma Pi Sigma
2018	William Barletta Scholarship, *US Particle Accelerator School*
2018	Forrest E. Craver Memorial Prize in Mathematics, *Dickinson College*
2018	Pi Mu Epsilon
2015	Benjamin Rush Scholarship, *Dickinson College*

Programming skills

Languages	Extensive knowledge of Python, R, and LaTeX.
	Working knowledge of C++/ROOT, MATLAB, SQL and UNIX.
Other	Data wrangling and analysis.
	Numerical analysis and simulations.
	Machine learning/deep learning theory and basic implementation.
	Python packages (numpy, scipy, TensorFlow, pandas).

Teaching Experience

Fall 2016 - present	Introductory Physics.
Fall 2017 - present	Integration and Infinite Series (Calculus II)/Multivariable Calculus (Calculus III).
Spring 2018	Introduction to Relativistic and Quantum Physics.
Fall 2016 - present	Evening Assistant - Introductory Physics.
Fall 2017 - present	Evening Assistant - Calculus I-II-III.