William Huanshan Chuang

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Education

Department of Mathematics and Statistics, University of San Francisco, Spring 2015 – current.

(Honors) Mathematics, and Computer Science minor, Expected 2018.

Number Theory Research Project: Number Theory and Geodesics in Hyperbolic Spaces.

Game Engineering Research Project: Self-Driving Cubes on A Möbius Strip Using Deep Learning.

Publication: *Revealing a Possible Implication by Imposing Lee-Yang Theorem on the Partition Function of the Universe*.

Mathematics Department, The Pennsylvania State University–University Park, Fall 2017.

Mathematics Advanced Study Semesters (MASS) Program.

Research

Research Assistant for Prof. Jeff Hamrick at USF (Fall 2016 – Spring 2017)

Volunteer student programmer for Prof. David Galles (Summer 2016)

Self-Driving Cubes on A Möbius Strip (using C++, started from scratch) (2016)

Kontsevich-Soibelman Wall-Crossing Formula, generalized Donaldson-Thomas Invariants (2013)

Teaching

San Francisco Math Circle (Fall 2016)

Teaching Assistant for National Dong Hwa University, Dep of Physics (Fall 2008 – Spring 2010)

Skills

Programming

Languages: C/C++, Python, Java, Lisp, Coq

Libraries: Numpy, TensorFlow

Database: Spark SQL, MongoDB

Methods

USF Classes: Number Theory, Differential Geometry, Real Analysis, Combinatorics, Introduction to Computer Science (Python and Java), Graduate Algorithms, Automata Theory, Game Engineering, Computer Architecture, C and System Programming, Data Structure, and Algorithms

Transferred NTU(2010–2013), and NDHU(2007–2009) Classes: Calculus I, II, and III, Real Analysis, Linear Algebra, Intro to Formal Methods, Linear Algebra and Probability, Discrete Mathematics, Applied Mathematics I, II, and III, Computational Physics, Thermal Physics, Modern Physics, Quantum Physics I and II, Quantum Mechanics I and II, Classical Mechanics I and II, Electrodynamics I and II, Statistical Mechanics II, Mathematical Physics I, Differential Geometry, Intro to Particle Physics, Dark Energy and Dark Matter, Supersymmetry, Quantum Field Theory II, Advanced Topics in Field Theory

Conferences, Workshops, Seminars and Courses Attended

CMND Graduate/Postdoc Summer Session on Kähler Geometry, 2017

Summer school on Topological Insulator and Spintronics, 2013

Dynamic Days Asia Pacific (DDAP) 7 — The 7th International Conference on Nonlinear Science, Academia Sinica, August 5, 2012

Summer School on Physics and Mathematics of Symmetry, National Taiwan University, 2012

Towards Ultimate Understanding of the Universe: First LeCosPA Symposium, February 6-9, 2012

Winter School: Anthony Zee's Lectures on Quantum Field Theory, Academia Sinica, Taiwan, 2011

The 2nd APCosPA Winter School/Workshop, National Taiwan University, January 17-28, 2011

The 2nd International Workshop on Dark Matter, Dark Energy Matter, National Tsinghua University, November 5-6, 2010

Summer School on Theoretical Physics, National Tsinghua University, 2009

Membership

Pi Mu Epsilon (University of San Francisco), 2017

Mathematical Association of America, Student Member, February 2017–Current

Association for Computing Machinery, SIGAI Member, April 2016–Current

Association for Computing Machinery, Student Member, April 2015–Current

Awards

Awarded 2004 First prize and 2003 Second prize in National Science and Engineering Fair in Taiwan