

# ANDY CHEN



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## EDUCATION

**University of Michigan, Ann Arbor**

**Ann Arbor, MI**

2018 — Present

Ph. D. Candidate in Physics

**Georgia Institute of Technology**

**Atlanta, GA**

2014 — 2018

B. Sc. in Physics *summa cum laude*

Minor in Mathematics and Music Performance

## EXPERIENCE

**UM Department of Physics**

**Ann Arbor, MI**

*Graduate Research, Dr. Dante Amidei — Optimization of FD for Resonance Detection*

May 2019 — Present

**GT School of Physics, Center for Nonlinear Science**

**Atlanta, GA**

*Undergraduate Research, Dr. Predrag Cvitanović — Search for Periodic Orbits*

August 2017 — December 2017

- Researched about Kuramoto-Sivashinsky equation and Michelson ODEs
- Redesigned code that solves Kuramoto-Sivashinsky evolution forward in space

**SLAC National Accelerator Laboratory**

**Menlo Park, CA**

*Internship, Dr. Jeff Corbett — TCSPC for Electron Bunch Measurement*

June 2017 — August 2017

- Designed MATLAB scripts to collect and send TCSPC data from PicoHarp 300
- Implemented methods to reduce instrumentational error in TCSPC data
- Developed EPICS panel for monitoring and maintaining SPEAR3 electron beam
- Presented research results during a seminar and in a technical report

**Lawrence Livermore National Laboratory**

**Livermore, CA**

*Internship, Dr. Philip C. Myint — Thermodynamic Modeling of Energetic Materials*

May 2016 — August 2016

- Extended Peng-Robinson Equation of State to various energetic materials
- Designed Fortran and Python scripts to develop pure and binary mixture models
- Collected data from published literature to validate model predictions
- Presented research progress during a department seminar and poster symposium

**Parker H. Petit Institute for Bioengineering & Bioscience**

**Atlanta, GA**

*Undergraduate Research, Dr. Mark R. Prausnitz — Ionic Liquids for Drug Delivery*

January 2015 — December 2015

- Synthesized ionic liquids that incorporate active pharmaceutical ingredients
- Prepared experiments to measure properties of ionic liquids and their alternatives
- Performed independent research on antifungal drugs as ionic liquids project
- Presented research at AIChE 2015 ASC Undergrad Student Poster Competition

## PUBLICATIONS

A. Chen. TCSPC monitoring of SPEAR3 electron beam via EPICS. *SULI Report*, 2017.

A. Chen, T. T. N. Huynh, A. Majumdar, and B. Musheno. *Origanum vulgare* subsp. hirtum glyceraldehyde-3-phosphate dehydro-genase-like (gapc) gene, partial sequence. *NCBI GenBank Nucleotide Database*, 2013.

B. Xu, E. Carranza, A. Chen, S. Condamoor, and J. Corbett. Electron bunch pattern monitoring via single photon counting at SPEAR3. *IBIC17, Lansing, MI*, 2017.

## SKILLS

### *Platforms and Software:*

UNIX	Git	Adobe CS5
EPICS	Linux	Microsoft Office Suite

### *Programming Languages and Techniques:*

Python	L <sup>A</sup> T <sub>E</sub> X	Monte Carlo Methods
MATLAB	Java	Parallelization
C++	JavaScript	Machine Learning
Fortran	HTML	

### *Lab Instrumentation and Techniques:*

TCSPC	Column Chromatography	Recrystallization
Proton NMR	Gas Chromatography	PCR Synthesis
HPLC	Viscometry	Electrophoresis
IR Spectroscopy	Fractional Distillation	Protein Blotting

### *Familiar Topics:*

Classical Mechanics	Particle Physics	Abstract Algebra
Electrodynamics	Radiation Physics	Real Analysis
Quantum Mechanics	Optics	Complex Analysis
Statistical Mechanics	General Relativity	Numerical Methods
Thermodynamics	Special Relativity	PDE
Quantum Field Theory	Cosmology	Probability & Statistics
	Organic Chemistry	Differential Geometry

### *Linguistic Languages:*

English	Native Proficiency
Mandarin Chinese	Minimum Professional Proficiency
French	Elementary Proficiency
Korean	Elementary Proficiency

## SCHOLARSHIPS AND AWARDS

### **Hitohiro Fukuyo Physics Scholarship (2018)**

Physics Scholarship awarded to students whose achievements and character reflect Dr. Fukuyo's intellectual accomplishments and personal integrity.

### **Kelley Family Music Scholarship (2016, 2017)**

Music Scholarship awarded upon recommendation by the Music Department to undergraduate students participating in the Georgia Tech music program.

### **President's Undergraduate Research Award (2015)**

Competitive awards funding undergraduate students conducting research with a Georgia Tech faculty member or Georgia Tech Research Institute scientist.

### **Phoenix Youth Symphony Young Musician's Competition (2014)**

Music Camp Scholarship awarded to first and second place recipients of each instrument division of the Concerto Competition.

## LEADERSHIP

### Georgia Tech China Care Club

Atlanta, GA

#### *Treasurer*

May 2017 — May 2018

- Documented the expenditures and managed the budget for all club activities
- Crafted and submitted bills and grant proposals to various funding groups
- Oversaw responsibilities and needs of Fundraising Coordinator and Social Chair

#### *Co-Fundraising Coordinator*

January 2015 — May 2015, May 2016 — May 2017

- Coordinated fundraisers that sponsor orphaned children from One Sky Foundation
- Aided Treasurer in applying for funding from the Student Government Association

#### *Historian*

May 2015 — May 2016

- Recorded club events and activities on social media to spread club awareness
- Collaborated with other committee members in the planning of large events

### Georgia Tech Yellow Jacket Archery Club

Atlanta, GA

#### *Secretary*

May 2015 — May 2016

- Managed membership, minutes and records, attendance, and announcements
- Organized club social, recruitment, and advertising initiatives
- Provided coaching and instruction as a Level 2 NTS certified instructor