ANDY CHEN

🏠 2315 West Alamo Drive, Chandler, AZ 85224
☎ +1 (480) 278 5596
✉ chen.andy14@gmail.com
in www.linkedin.com/in/achen87
🌐 andyzfchen.github.io

EDUCATION

University of Michigan, Ann Arbor — Ann Arbor, MI
2018 — Present
Ph. D. Candidate in Physics and Scientific Computing (Joint Program)

Georgia Institute of Technology — Atlanta, GA
2014 — 2018
B. Sc. in Physics *summa cum laude*
Minor in Mathematics (Analysis) and Music Performance (Percussion)

RESEARCH EXPERIENCE

UM Department of Physics — Ann Arbor, MI
Graduate Research | Optimization of FD for Resonance Detection
May 2019 — Present
- Reconstructed Functional Decomposition from Python to C++ framework
- Refined curve fitting techniques for increased robustness and accuracy
- Conducted statistical analysis on toy signal injection experiments

Reference: Dr. Dante Amidei | amidei@umich.edu

GT School of Physics, Center for Nonlinear Science — Atlanta, GA
Undergraduate Research | Search for Periodic Orbits
August 2017 — December 2017
- Researched and manipulated Kuramoto-Sivashinsky and Michelson ODEs
- Redesigned python scripts that solves Kuramoto-Sivashinsky in Fourier space

Reference: Dr. Predrag Cvitanović | predrag.cvitanovic@physics.gatech.edu

SLAC National Accelerator Laboratory — Menlo Park, CA
Internship | 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

Reference: Dr. Jeff Corbett | corbett@slac.stanford.edu

Lawrence Livermore National Laboratory — Livermore, CA
Internship | 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

Reference: Dr. Philip C. Myint | myint1@llnl.gov

Parker H. Petit Institute for Bioengineering & Bioscience — Atlanta, GA
Undergraduate Research | 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

Reference: Dr. Wilmarie M. Ramos | wilmarie.medina@gatech.edu

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	Docker	Microsoft Office Suite
	Linux	

Programming Languages and Techniques

Python	LaTeX	Continuous Integration
C++	Java	Monte Carlo Methods
BASH	JavaScript	Parallelization
MATLAB	HTML	Machine Learning
Fortran		

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

FELLOWSHIPS, SCHOLARSHIPS, & AWARDS

NSF Graduate Research Fellowship Program Applicant (2019)
Graduate Fellowship awarded to outstanding students in NSF-supported disciplines with three years of support in tuition and research-related expenses.

University of Michigan Physics Graduate Fellowship (2018)
Graduate Fellowship awarded by the Physics Department in recognition of outstanding undergraduate accomplishments.

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.

WORK EXPERIENCE	**UM Rackham Graduate School**	**Ann Arbor, MI**

Graduate Student Instructor

September 2018 — Present

- Prepared mini-lectures for labs, discussion sessions, and quizzes
- Instructed engineering physics lab classes
- Graded lab reports, quizzes, and homeworks
- Assisted undergraduates with homework and review with physics and math courses

LEADERSHIP EXPERIENCE	**Friends In Deed**	**Ypsilanti, MI**

Demo Instructor

January 2019 — Present

- Planned and performed science experiment demos for kids groups

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**

Historian

May 2016 — December 2016

- Maintained records of shooting scores and progress of club members
- Documented club events and activities for advertising and recruitment initiatives

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