PHIL CHEN

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EDUCATION

Stanford University *B.S. Mathematics* (2021) *M.S. Computer Science* (2022) *GPA: 4.1*

- **Student-athlete:** NCAA Division I Men's Rowing
- Current major-related courses: Natural Language Processing using Deep Learning (CS 224N), Multilinear Algebra and Calculus on Manifolds (Math 62CM), Applied Math through Fluid Dynamics (Math 275), Teaching Computer Science (CS 198)

University High School *GPA: 4.0/4.0*

- **President**: Space Settlement Design Team**,** Science Olympiad, Science Bowl, Math

EXPERIENCE

Google (*Geo team*)
Software Engineering Intern (June, 2019 – September, 2019)

- Use machine learning and deep learning to extract information from Geo UGC photos

Stanford University Bio-X (*Dror Lab*)
Research Assistant (December, 2018 – present)

- Predicting protein interfaces using graph convolutional neural networks
- Parallelizing experiments across multiple GPUs using MPI and Horovod

Stanford University School of Engineering
Section Leader (December, 2018 – present)

- Teach weekly lessons for Stanford's Programming Abstractions class (CS 106B)
- Guide, troubleshoot, and debug students on coding assignments

National Institutes of Health
Laboratory of Biological Modeling
Research Intern (June, 2017 – August, 2017)

- Developed ODE model of dynamics in type 2 diabetes
- Analyzed data with gradient-based learning methods and bifurcation analysis
- Developed tool for doctors to assess effectiveness of diabetes drugs

US Physics Team
American Association of Physics Teachers
Finalist (May, 2017 – June, 2017)

- Trained intensively with top 20 American students in general physics theory and labs

PUBLICATIONS

Predicting Future Glycemic Trajectories with a Mathematical Model
American Diabetes Association (July, 2018)

- Developed model to extract metabolic parameters of patients
- Potential in clinical application in guiding therapy

AWARDS

Top 300 students, William Lowell Putnam Mathematical Competition (Dec, 2018)
Top 20 students, US National Chemistry Olympiad (May, 2017)
Four-time qualifier, USA Math Olympiad (2015, 2016, 2017, 2018)
Concertmaster, California All-State Honor Orchestra (2016)
Gold division, USA Computing Olympiad (2018)

SKILLS

Java/C++

- Data structures, algorithms, object-oriented programming

Python

- Convolutional neural networks in TensorFlow and Keras
- Data structures, algorithms, other AI algorithms

Matlab

- ODE solvers, Statistics Toolbox, Machine Learning, and Parallel Computing Toolbox
- Matcont (add-on software) for bifurcation analysis of ODEs

Linux/Unix scripting

- Generated massively parallel programs running on thousands of cores
- Proficient with Slurm Workload Manager