Tyler Chen

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https://chen.pw

Education

University of Washington . . . .*Sept. 2017 - Present*
Ph.D. in Applied Mathematics (in progress)

University of Washington . . . . *Sept. 2017 - Dec. 2018*
M.Sc. in Applied Mathematics

Tufts University . . . . *Aug. 2013 - May 2017*
B.S. Summa Cum Laude in Mathematics and Physics; Minor in Studio Art

Research

University of Washington (under Anne Greenbaum) . . . .*Mar. 2018 - Present*
Study the behavior of communication hiding/avoiding implementations of the conjugate gradient
algorithm in finite precision.

Soft Matter Theory . . . . *Apr. 2015 - Jan. 2017*
Optimize Monte Carlo simulations of rigid balls constrained to the surface of deformable ellipsoids

Research in Industrial Projects for Students Hong Kong . . . . *May 2016 - August 2016*
Design and implement a short range underwater acoustic communication protocol for the Hong Kong
company ePropulsion

Publications

[2] **Tyler Chen**. *Predict-and-recompute conjugate gradient variants*. 2019. arXiv: 1905.01549 [cs.NA].

[1] Anne Greenbaum, Hexuan Liu, and **Tyler Chen**. *On the Convergence Rate of Variants of the Conjugate Gradient Algorithm in Finite Precision Arithmetic*. 2019. arXiv: 1905.05874 [cs.NA].

Talks and Posters

[1] **Tyler Chen**. *Symmetric Preconditioner Refinement Using Low Rank Approximations*. Presentation at Baidu Research. 2019. [pdf].

Teaching

TA, Probability And Statistics For Computational Finance (UW CFRM 410) . . . . *Winter 2019*
TA, Calculus with Analytic Geometry I (UW MATH 124) . . . .*Autumn 2018*
TA, Calculus with Analytic Geometry II (UW MATH 12) . . . . *Winter 2018*
TA, Calculus with Analytic Geometry II (UW MATH 125). . . . .*Autumn 2017*
Lab TA, Electronics (Tufts PHY 41). . . . .*Spring 2017*
Lab TA, Electronics (Tufts PHY 41) . . . . *Spring 2016*
Grader, Discrete Mathematics (Tufts MATH 61) . . . . *Spring 2016*
Grader, Calculus III (Tufts MATH 42). . . . .*Fall 2015*
Grader, Differential Equations (Tufts MATH 51) . . . . *Spring 2015*
Grader, Calculus III (Tufts MATH 42) . . . . *Fall 2014*

Awards & Honors

Graduate Research Fellowship (NSF) .... *June 2019 - June 2022*

Top Scholars Fellowship (UW) .... *Fall 2017*

The Audrey Butvay Gruss Science Award (Tufts) .... *April 2017*

Phi Beta Kappa (Tufts) .... *April 2017*

Sigma Pi Sigma Physics Honors Society (Tufts) .... *May 2016*

The Howard Sample Prize Scholarship in Physics (Tufts) .... *April 2015*

Dean's List (Tufts) .... *All Semesters*

Outreach

Minisymposium Organizer .... *Feb. 2020*

High performance Krylov subspace methods: Theory, Implementation, and Application (at SIAM Parallel Processing 20)

Graduate Student Representative .... *2019 - 2020*

Represent interests of graduate students to the department

Washington Directed Reading Program .... *Autumn 2019*

Mentor undergraduate student in independent reading project

Numerical Analysis Research Club .... *Spring, Autumn 2019*

Organize and plan weekly meetings for NARC research club

SIAM UW Mental Health Conversation and Resources .... *October 2018*

Organize and facilitate a discussion about mental health in grad school

Professional

Tufts Conference and Events Services .... *May 2014 - Aug. 2017*

Reservations Manager, Registrar, Facilitator

Oversee all housing reservations at Tufts University during the summer conference season; Coordinate and assist clients with logistical details relating to conferences; perform supervisory role overseeing and training new staff; schedule employee shifts (implemented a VBA/excel system to automate much of this process); prepare individualized printed materials for upcoming conferences.

Tisch Library Digital Design Studio .... *Aug. 2014 - May 2017*

Student Supervisor

Provide supervision to student workers; staff front desk at the Digital Design Studio; assist patrons with large format printing, recording, digitization equipment, and software.