Tyler Chen

chentyl@uw.edu
https://chen.pw

Education

University of Washington .... *2017 - Present*
Ph.D. in Applied Mathematics

- My research is focused on the design and analysis of conjugate gradient and Lanczos type algorithms in exact and finite precision arithmetic.

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

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

Publications

[3] **Tyler Chen**. *Random variables in finite precision.* 2020. arXiv: 2007.11041 [math.ST]. [intro]

[2] **Tyler Chen** and Erin C. Carson. *Predict-and-recompute conjugate gradient variants.* 2020. arXiv: 1905.01549 [cs.NA]. [intro]

- abridged version was one of three Student Paper Competition winners at 16th Copper Mountain Conference on Iterative Methods.

[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]. [intro]

Talks and Posters

[4] **Tyler Chen**, Erin C. Carson, and Anne Greenbaum. *Analyzing the Effects of Local Roundoff Error on Predict-and-Recompute Conjugate Gradient Variants.* Poster at Householder Symposium (Cancelled). June 2020.

[3] **Tyler Chen**. *Predict-and-recompute conjugate gradient variants.* Presentation at Copper Mountain Student Paper Award Session (Cancelled). Mar. 2020.

[2] **Tyler Chen** and Erin C. Carson. *Predict-and-recompute conjugate gradient variants.* Presentation at SIAM Parallel Processing. Feb. 2020. [pdf]

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

Teaching

Instructor, Interdisciplinary Writing/Natural Science (UW ENGL 199) .... *Autumn 2020*
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

Boeing Research Award (UW Department of Applied Mathematics) *2020*
Student Paper Competition winner (Copper Mountain Conference on Iterative Methods) *2020*
Graduate Research Fellowship (NSF) *2019*
Top Scholars Fellowship (UW) *2017*
The Audrey Butvay Gruss Science Award (Tufts) *2017*
Phi Beta Kappa (Tufts) *2017*
Sigma Pi Sigma Physics Honors Society (Tufts) *2016*
The Howard Sample Prize Scholarship in Physics (Tufts) *2015*
Dean's List (Tufts) .... *2013 - 2017*

Service and Outreach

Minisymposium Organizer .... *Feb. 2020*
High performance Krylov subspace methods: Theory, Implementation, and Application (at SIAM
Parallel Processing 20) [program]

Graduate Student Representative .... *2019 - 2020*
Represent interests of graduate students to the department

Diversity Committee Departmental Climate Orientation .... *Oct. 2019*
Pannelist for event focused on building an inclusive department culture

Washington Directed Reading Program .... *Autumn 2019*
Mentor undergraduate student in independent reading project

Numerical Analysis Research Club *2019-2020*
Organize and plan weekly meetings for NARC

SIAM UW Mental Health Conversation and Resources .... *Oct. 2018*
Organize and facilitate a discussion about mental health in grad school

Software

PETSc (https://www.mcs.anl.gov/petsc/)
Contribute PIPEPRCG. This method can be used by with the flag -ksp_type pipeprcg.

Professional

Tufts Conference and Events Services .... *2014 - 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 .... *2014 - 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.