CURRICULUM VITAE FOR ALAN N. AMIN

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EDUCATION

2015-2019	Bachelor of Science at the University of Toronto Specialist in Biochemistry and Major in Mathematics cGPA 3.98
2019-May 2023	PhD at Harvard University (anticipated) Thesis: Nonparametric Methods for Building and Evaluating Models of Biological Sequences. Advised by Professor Debbie Marks Systems Biology Program Supported by NSERC Postgraduate Scholarships – Doctoral program: $21,000 CAD per year for three years, starting July 2022

PUBLICATIONS

Amin A N, Weinstein E N*, Marks D S* (*Equal contribution). A Kernelized Stein Discrepancy for Biological Sequences. *To appear in ICML,* 2023

Amin A N, Weinstein E N*, Marks D S* (*Equal contribution). Kernels with Guaranteed Flexibility for Reliable Machine Learning on Biological Sequences. *Preprint,* 2023, https://arxiv.org/abs/2304.03775

Weinstein E N*, **Amin A N***, Frazer J, Marks D S (*Equal contribution). Non-identifiability and the blessings of misspecification in models of molecular fitness and phylogeny. *NeurIPS,* 2022 (Oral)

Weinstein E N, **Amin A N**, Grathwohl W, Kassler D, Disset J, Marks D S. Optimal design of stochastic DNA synthesis protocols based on generative sequence models, *AISTATS,* 2022

Amin A N*, Weinstein E N*, Marks D S (*Equal contribution). A generative nonparametric Bayesian model for whole genomes, *NeurIPS*, 2021.

Amin A N, Lin Y-H, Das S, Chan H S. “Theory for a Sequence-Specific "Fuzzy" Binding Mechanism Between a Pair of Intrinsically Disordered Proteins”, *J Phys Chem B,* 2020

Das S, **Amin A N**, Lin Y-H, Chan H S. “Coarse-grained residue-based models of disordered protein condensates: utility and limitations of simple charge pattern parameters.” *Phys. Chem. Chem. Phys.* 2018

Delplace V, Ortin-Martinex A, Tsai E L S, **Amin A N**, Wallace V and Shoichet M S. “Controlled Release Strategy Designed for Intravitreal Protein Delivery to the Retina.” *J. Control. Release* 2018**.**

PREVIOUS RESEARCH EXPERIENCE

Undergrad researcher Sept 2017 – Aug 2019.
Advisor: **Dr. Hue Sun Chan**. University of Toronto
Mathematical models and simulations of the physics of interactions of disordered proteins.

Undergrad researcher June 2018 – Aug 2018.
Advisor: **Dr. Clifford Brangwynne**. Princeton University
Mechanics of nuclear membrane-less organelles investigated using microfluidics.

Undergrad researcher May 2017 - Aug 2017.
Advisor: **Dr. Molly Shoichet**. University of Toronto
Designing and characterizing the mechanics of a hydrogel for drug delivery.

Undergrad researcher July 2016 – Apr 2017.
Advisor: **Dr. Ronald Kluger**. University of Toronto
Chemistry of loading tRNAs with alternative amino acids for synthetic biology.

SERVICE

Reviewer 2020/2021, **area-chair** 2022 at Learning Meaningful Representations of Life workshop at NeurIPS

Top 10% of reviewers at ICML 2022 - invited to chair a session

Top reviewer at Neurips 2022 - moderated deep-dive session 5A

Reviewer at ICML 2023 (ongoing)

RECENT PRESENTATIONS

NeurIPs, Learning Meaningful Representations of Life Workshop; **poster**; December 2020.

Broad institute, Models, Inference and Algorithms Talks; **primer (talk)**; May 2021.

CSHL, Probabilistic Modeling in Genomics; **poster**; May 2021.

NeurIPs, Learning Meaningful Representations of Life Workshop; **talk**; December 2021.

NeurIPs, Learning Meaningful Representations of Life Workshop; **poster**; December 2022.

Stat 300 Seminar series at the Harvard Statistics Department; **talk**; March 2023

MIT Readstat reading group; **talk**; April 2023

TEACHING EXPERIENCE

Sept – Apr 2017	Teaching assistant for MAT137 Calculus! at the UofT
Sept – Apr 2018	Teaching assistant for MAT135 & MAT136 Calculus at the UofT
Sept – Jan 2019	Teaching assistant for MAT224 Linear Algebra at the UofT
Sept – Jan 2022	Teaching fellow for BCMP230 Principles and practice of drug development at Harvard University