

**Hong Suh**  
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Github: <https://github.com/hongsuh7>  
Website/Portfolio: <https://hongsuh7.github.io>

## EDUCATION

<i>Ph.D.</i> , Mathematics	on leave	<i>M.A.</i> , Mathematics	2019	<i>B.A.</i> , Mathematics, cum laude	2016
Specializations: Probability, PDEs		Specializations: Probability, PDEs		GPA: 3.89	
UC Berkeley, Berkeley, CA		GPA: 3.85		Pomona College, Claremont, CA	
		UC Berkeley, Berkeley, CA			

## SELECT PROJECTS

- *Normalizing flow model.* Neural ODEs (NODEs) are the legacy best normalizing flow models for image generation, but they require high computational cost. I developed a new type of neural network inspired by NODEs that lowered computational cost by **x percent** and can be used as a replacement for NODEs in image generation. This research is in progress.
- *Tennis win prediction model.* Historically, hyperparameters have been hand-picked in Elo rating systems. Taking advantage of parallelization, I developed a tennis-specific model which automates hyperparameter selection. This model decreased log-loss error by about 1.5% compared to FiveThirtyEight's model.
- *Stochastic homogenization for an exclusion process.* Infection disease growth, forest fires, and crystal growth can all be modeled with stochastic growth models. I established new quantitative bounds on the long-term statistics of a stochastic growth model.
- *Fringe pairs in generalized MSTD sets.* I led a project in a team of three to find new ways to construct generalized MSTD sets, which are special finite sets of integers, and found the most "extreme" MSTD set known at the time using our new methods.

## PUBLICATIONS (AUTHORS IN ALPHABETICAL ORDER)

- M. Asada, S. Manski, S. J. Miller, H. Suh, *Fringe pairs in generalized MSTD sets*, Int. J. Number Theory 13.10 (2017): 2653-2675.
- P. Burkhardt, A. Z.-Y. Chan, G. Currier, S. R. Garcia, F. Luca, H. Suh, *Visual Properties of Generalized Kloosterman sums*, J. Number Theory 160 (2016), 237-253.

## EXPERIENCE

<i>Math Teacher</i>	June 2019 – June 2020
Proof School, San Francisco, CA	

- Created and executed lesson plans covering nonstandard math topics—such as second-semester university-level linear algebra, number theory, and discrete probability—to kids who love math.

## AWARDS

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|---|-------------|
| • NSF Graduate Research Fellowship Honorable Mention          | 2016        |
| • Hugh J. Hamilton Senior Mathematics Prize, Pomona College   | May 2016    |
| • Bruce J. Levy Memorial Prize in Mathematics, Pomona College | August 2015 |
| • The Llewellyn Bixby Mathematics Prize, Pomona College       | August 2014 |

## SKILLS

R, Python, Pytorch, SQL, Mathematica, L<sup>A</sup>T<sub>E</sub>X