

Kyung Ha

Education

August 2016 - PRESENT (Expected Graduation: June 2022)

UCLA - *Ph.D. in Mathematics (Advisor: Prof. Andrea Bertozzi)*

- Advancement to Doctoral Candidacy: July 3, 2019

March 2010 - February 2016

Seoul National University - *B.S. Bachelor of Science in Mathematics*

Awards

- **UCLA Girsky Fellowship Award** (2021-22 academic year)
- **National Scholarship For Science and Engineering** (March 2010 - February 2016) Granted from Korea Student Aid Foundation (KOSAF), covering tuition completely.

Experience

- **Academic mentor, Research in Industrial Projects for Students (RIPS) 2021, IPAM at UCLA** (June 2021 - August 2021)
- **Asst. mentor, REU Research Summer 2019, UCLA** (June 2019 - August 2019)
- **Graduate student Researcher, UCLA** (2018 - 21)
- **Teaching Assistant, UCLA** (2016-18 and Spring 2020-21)
 - Calculus of Several Variables, Linear Algebra and Applications, and Differential Equations

Publications

1. Wu CY, Ouyang M, Wang B, de Rutte J, Joo A, Jacobs M, Ha K, Bertozzi AL, Di Carlo D. **Monodisperse drops templated by 3D-structured microparticles**. Science advances. 2020 Nov 1;6(45):eabb9023.
2. Grotheer R, Huang L, Huang Y, Kryshchenko A, Kryshchenko O, Li P, Li X, Rebrova E, Ha K, Needell D. **COVID-19 Literature Topic-Based Search via Hierarchical NMF**. In Proceedings of the 1st Workshop on NLP for COVID-19 (Part 2) at EMNLP 2020 2020 Dec.
3. Du RS, Liu L, Ng S, Sambandam S, Adame BH, Perez H, Ha K, Falcon C, de Rutte J, Di Carlo D, Bertozzi AL. **Statistical energy minimization**

- theory for systems of drop-carrier particles.** Physical Review E. 2021 Jul 26;104(1):015109.
4. Kyung Ha, Brendan Harding, Andrea L. Bertozzi, and Yvonne M. Stokes, **Dynamics of small particle inertial migration in curved square ducts**, Accepted, SIAM Journal on Applied Dynamical Systems.
 5. Bhargav Samineni, Benjamin Thomas, Amelia Tran, Cherlin Zhu, Kyung Ha, Ganesh Dasika, Davini David and Laurent White. **Using physics-informed regularization to improve extrapolation capabilities of neural networks.** In NeurIPS 2021, 2021, Accepted.
 6. Kyung Ha, Joseph de Rutte, Dino Di Carlo, Andrea L. Bertozzi, **Surface energy minimizing configurations for axisymmetric microparticles**, Submitted and under revision, Journal of Engineering Mathematics.

Oral Presentations (*speaker)

- Minimal energy surface configurations and exchange of fluids for axisymmetric microcapsules in a mixture of two immiscible fluids, Kyung Ha*, Joseph de Rutte, Dino Di Carlo, Andrea L. Bertozzi (April 20, 2019, Socal Fluids XIII)
- Wave and Navier Stokes, Kyung Ha* (March 5, 2020, GSO talk UCLA)
- Dynamics of small particle inertial migration in curved square ducts, Kyung Ha*, Brendan Harding, Andrea L. Bertozzi, and Yvonne M. Stokes (May 25, 2021, SIAM DS21)
- Minimal energy surface configurations for axisymmetric microcapsules, Kyung Ha*, Joseph de Rutte, Wen Li, Dino Di Carlo, Andrea L. Bertozzi (Sept 14, 2021, FBP 2021)

Poster Presentations (*presenter)

- Modeling Systems of Drop Carrier Particles Through Energy Minimization, Ryan Shijie Du*, Lily Liu*, Simon Ng, Sneha Sambandam*, Bernardo Hernandez Adame*, Hansell Perez*, Kyung Ha, Claudia Falcon, Joseph de Rutte, Dino Di Carlo, and Andrea L. Bertozzi (November 2019, The 72nd Annual Meeting of the American Physical Society's Division of Fluid Dynamics (DFD))

Other

- Directed Reading Program mentor for five students (Winter and Spring, 2020~21)
- Volunteer of the UCLA Pritzker Center x Bruin Tutor Network program (Since August 11, 2020, Free tutoring for foster children)
- Programming skills in Python and Matlab.