Yixiang Deng

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Professional Experience

Postdoc Fellow, Ragon Institute of MGH, MIT and Harvard. **10/2021–present**
Advisor: Galit Alter

Visiting Scientist, MIT. **11/2021–present**
Advisor: Douglas A. Lauffenburger

Visiting Graduate Research Student, Beth Israel Deaconess Medical Center (BIDMC). **08/2020–06/2021**
Advisor: Christos S. Mantzoros

Summer Graduate Research Intern, Pacific Northwest National Laboratory. **05/2018–08/2018**
Advisor: Xiu Yang

Education

Ph.D. in School of Engineering, Brown University. **09/2016–09/2021**
Advisor: George Em Karniadakis

M.S. in Division of Applied Mathematics, Brown University. **09/2017–05/2019**

M.S. in School of Engineering, Brown University. **09/2015–05/2017**

B.Eng. in Department of Engineering Mechanics, Shanghai Jiao Tong University. **09/2011–06/2015**
Thesis Advisor: Jiasong Wang

Honor and Awards

Traveling Award, The Rising Stars in Mechanical Engineering Workshop. 2021

Corinna Borden Keen Research Fellowship, Brown University. 2019-2020

Traveling Award, The US National Congress on Computational Mechanics (USNCCM15). 2019

Traveling Award, The Applied Mathematics: The Next 50 Years, the Data Science and Optimization Workshop. 2019

Traveling Award, Workshop on Recent Developments on Mathematical/Statistical approaches in DAta Science (MSDAS). 2019

George Irving Hopkins Fellowship, Brown University. 2018-2019

Recipient of (7th Cohort) Open Graduate Education Program, Brown University Graduate School. 2018

Outstanding Graduate, Shanghai Jiao Tong University. 2015

The Third Prize Scholarship, Shanghai Jiao Tong University. 2014

Selected Publications

Q. Zhang, K. Sampani, M. Xu, S. Cai, **Y. Deng**, H. Li, J. Sun, G. Karniadakis, AOSLO-net: A deep learning-based method for automatic segmentation of retinal microaneurysms from adaptive optics scanning laser ophthalmoscope images. *Under review*. 2022

H. Li*, **Y. Deng***, Z. Li, C. Mantzoros, G. Frydman, A. Gallastegi, G. Karniadakis, Computational modeling of microthrombus formation in COVID-19. *Under review*. 2022

H. Li, **Y. Deng**, K. Sampani, S. Cai, Z. Li, J. Sun, G. Karniadakis, Computational investigation of blood cell transport in retinal microaneurysms. *PLOS Computational Biology* (**Cover Article**). 2022

Y. Deng*, L. Lu*, L. Aponte, A. Angelidi, V. Novak, G. Karniadakis, C. Mantzoros, Deep transfer learning and data augmentation improve early prediction of abnormal glucose levels in patients with type 2 diabetes. *npj Digital Medicine*. 2021

E. Javadi, **Y. Deng**, G. Karniadakis, S. Jamali, *In silico* biophysics and hemorheology of blood hyperviscosity syndrome. *Biophysical Journal*. 2021

A. Yazdani*, **Y. Deng***, H. Li*, E. Javadi, Z. Li, S. Jamali, J. Humphrey, C. Mantzoros, and G. Karniadakis, Integration of blood cell mechanics and platelet adhesive dynamics with coagulation cascade: application to normal and diabetic blood. *Journal of Royal Society Interface*. 2021

Y. Deng, G. Lin, X. Yang, Multifidelity data fusion via gradient-Enhanced gaussian process regression. *Communications in Computational Physics*. 2020

Y. Deng*, D. Papageorgiou*, X. Li, N. Perakakis, C. S. Mantzoros, M. Dao, G. Karniadakis, Quantifying fibrinogen-Dependent aggregation of red blood cells in type 2 diabetes mellitus. *Biophysical Journal*. 2020

Y. Deng*, D. Papageorgiou*, H. Chang, S. Abidi, X. Li, M. Dao, G. Karniadakis, Quantifying shear-induced deformation and detachment of individual adherent sickle red blood cells. *Biophysical Journal*. 2019

L. Lu*, **Y. Deng***, X. Li, H. Li, G. Karniadakis, Understanding the twisted structure of amyloid fibrils via molecular simulations. *The Journal of Physical Chemistry B*. 2018

***Equal contribution**.

Conferences and Workshops

The Rising Stars in Mechanical Engineering Workshop, MIT. 2021

Women in Data Science (WiDS) Worldwide, Stanford University (virtual). 2021

Red Cell Club Meeting, Virtual. 2020

VPH2020, Inria, Paris, France (virtual). 2020

SIAM MDS20: Machine Learning for Physical Systems, SIAM (virtual). 2020

Red Cell Club Meeting, University of Rochester, Rochester. 2019

The Applied Mathematics: The Next 50 Years, the Data Science and Optimization Workshop, University of Washington, Seattle. 2019

The US National Congress on Computational Mechanics (USNCCM15) , University of Texas, Austin. 2019

Workshop on Recent Developments on Mathematical/Statistical approaches in DAta Science (MSDAS), University of Texas, Dallas. 2019

Algorithms for Modern Power Systems (AMPS) Annual Workshop, American University, Washington, DC. 2018

Services and Certificates

Member-at-large, U.S. Association for Computational Mechanics-Female Research Group (USACM-FRG). **2020-present**

Sheridan Teaching Seminar Program (Certificate I), The Sheridan Center for Teaching and Learning, Brown University. 2018

Teaching Assistant, School of Engineering, Brown University. **09/2017–05/2018**

- ENGN0030: Introduction to Engineering
- ENGN0040: Dynamics and Vibrations