Tianju Xue (薛添驹)

Ph.D. Student, Princeton University

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Education

2017–Present **Ph.D. Student**, *Princeton University*, (Expected graduation date: Jan, 2022).
Research area: Computational mechanics, Machine Learning
Advisors: Prof. *Sigrid Adriaenssens* and Prof. *Ryan P. Adams*

2013–2017 **B.Sc.**, *Shanghai Jiao Tong University*.
Mechanical Engineering (UM-SJTU Joint Institute), GPA - 3.80/4.0 (ranking 1/53)

2016 **Exchange Student**, *The University of Hong Kong*.
Mechanical Engineering

Experience

Working

2020 **Quantitative Research Intern**, Sixie Capital, Shanghai.
Statistical analysis of market data: Seeking investment alpha

2019 **Research Intern**, Facebook, Inc., Redmond.
AR/VR at Facebook Reality Labs: Deep learning accelerated 3D printing material design

2017 **Engineering Intern**, Apple, Inc., Shanghai.
Apple accessories team: Keyboard design and manufacturing

Teaching

2017-2021 **Graduate Teaching Assistant**, Princeton University.
SML201 Introduction to Data Science
COS424 Fundamentals of Machine Learning
CEE205 Mechanics of Solids

2013-2017 **Undergraduate Teaching Assistant**, Shanghai Jiao Tong University.
VM382 Mechanical Behaviour of Materials
VP140 Physics

Peer-reviewed Publications

2021 X.Sun, **T.Xue**, S.M. Rusinkiewicz, R.P.Adams, Amortized Synthesis of Constrained Configurations Using a Differentiable Surrogate, *NeurIPS*, 2021.

2021 **T.Xue**, S.Adriaenssens, S.Mao, Mapped phase field method for brittle fracture, *Computer Methods in Applied Mechanics and Engineering*, 2021.

2021 **T.Xue**, W.C.Sun, S.Adriaenssens, Y.Wei, C.Liu, A new finite element level set reinitialization method based on the shifted boundary method, *Journal of Computational Physics*, 2021.

2020 A.Beatson, J.T.Ash, G.Roeder, **T.Xue**, R.P.Adams, Learning Composable Energy Surrogates for PDE Order Reduction, *NeurIPS*, 2020.

2020 **T.Xue**, T.J.Wallin, Y.Menguc, S.Adriaenssens, M.Chiaramonte Machine learning generative models for automatic design of multi-material 3D printed composite solids, *Extreme Mechanics Letters*, 2020.

2020 **T.Xue**, A.Beatson, S.Adriaenssens, R.P.Adams, Amortized Finite Element Analysis for Fast PDE-Constrained Optimization, *ICML*, 2020.

2020 **T.Xue**, A.Beatson, M.Chiaramonte, G.Roeder, J.T.Ash, Y.Menguc, S.Adriaenssens, R.P.Adams, S.Mao, A data-driven computational scheme for the nonlinear mechanical properties of cellular mechanical metamaterials under large deformation, *Soft Matter*, 2020.

2019 Y.Wan, **T.Xue**, Y.Shen, The successive node snapping scheme for an evolving branched curve in 2D and 3D, *Computer-Aided Design*, 2019.

2019 Y.Wan, **T.Xue**, Y.Shen, The successive node snapping scheme: A method to obtain conforming meshes for an evolving curve in 2D and 3D, *Finite Elements in Analysis and Design*, 2019.

2017 M.Ma, **T.Xue**, S.Chen, Y.Guo, Y.Chen, H.Liu, Features of structural relaxation in diblock copolymers, *Polymer Testing*, 2017.

Presentations

2021 Winner of student/post-doctoral fellow competition at USACM workshop on "New Trends and Open Challenges in Computational Mechanics: from Nano to Macroscale"

Reviewing

Extreme Mechanics Letters

Selected Honors

2017 **Gordon Y.S. Wu Fellowships** *A highly prestigious award at Princeton University*

2016 **The Merit Student Model** *Person of the year at Shanghai Jiao Tong University*

2015 **National Scholarship** *Top scholarship for undergraduate students in China*

Skills

Tools Matlab, LaTeX

Programming Languages Python, C/C++

Languages

Mandarin *Native*

English *TOEFL: 111/120*