Stephanie Wang

University of California, San Diego
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Education

2014-2020 **Ph.D. in Mathematics**, *UCLA*, Dissertation advisor: Joseph Teran.

2014-2016 **M.S. in Mathematics**, *UCLA*.

2009-2013 **B.S. in Mathematics**, *National Taiwan University*, *magna cum laude*.

Research Experience

2020-present **Postdoc – under Prof. Albert Chern**, *UCSD*, San Diego, CA.
Weird maths, Houdini, and Python programming with applications in geometric processing, physics simulation, inverse rendering, and geometric learning.

2019-2020 **Ph.D. Study – under Prof. Wilfrid Gangbo**, *UCLA*, Los Angeles, CA.
Regularity theory for minimizers of polyconvex functionals related to Navier-Stokes equation.

2019 summer **Summer Exchange – under Prof. Johan Gaume**, *EPFL*, Lausanne, Switzerland.
Physics-based simulations, post-processing, and data analysis of snow and tire interaction and general consultation at the Snow and Avalanche Simulation Laboratory.

2016-2019 **Ph.D. Study – under Prof. Joseph Teran**, *UCLA*, Los Angeles, CA.
Physics-based simulations for animation purposes using C++ programming, convex and nonconvex optimizations, numerical PDEs, numerical linear algebra, and multithreading.

2013-2014 **Research Assistantship – under Prof. Wen-Wei Lin**, *NCTU*, Hsinchu, Taiwan.
Generalized eigenvalue problems using MATLAB programming.

Industry Experience

2018 summer **Technology Intern**, *Walt Disney Animation Studio*, Burbank, CA.
R&D for pioneer simulation technology in animated feature film, teaming with FX artists, numerical analysis, continuum mechanics, C++, HDK.

Teaching Experience

2020 **Assistant Adjunct Professor**, *UCLA Math Dept*, Los Angeles, CA (virtual).
Teaching Machine Learning (Math156) and Calculus of Several Variables (Math32A).

2019 spring **Graduate Student Instructor**, *UCLA Math Dept*, Los Angeles, CA.
Teaching Linear Algebra and Applications (Math33A).

2015-2020 **Teaching Assistant**, *UCLA Math Dept*, Los Angeles, CA.
Leading discussion sessions and grading homework/exams for: linear algebra and intro to mathematical proofs, undergrad- and grad-level numerical methods, and C++ programming (introductory, intermediate, and advanced).

Awards and Prizes

Jul 2019 **Best Paper Award**, *ACM SIGGRAPH/Eurographics Symposium on Computer Animation*.

Sep 2014 **Eugene V. Cota-Robles Fellowship**, *UCLA*.

Jun 2013 **Dean's Award, College of Science**, *National Taiwan University*.

Aug 2012 **Bronze Medal, Applied and Computational Mathematics**, *S.T. Yau College Student Mathematics Contest*.

Preprints

Nov 2021 D. Palmer, D. Smirnov, **S. Wang**, A. Chern, J. Solomon, DeepCurrents: Learning Implicit Representations of Shapes with Boundaries, arXiv.

Aug 2019 J. Carlen, J. Pont, C. Mentus, S. Chang, **S. Wang**, M. Porter, Role Detection in Bicycle-Sharing Networks Using Multilayer Stochastic Block Models, arXiv.

Publications

Sep 2021 L. Blatny, H. Löwe, **S. Wang**, J. Gaume, Computational micromechanics of porous brittle solids, Computers and Geotechnics, ScienceDirect.

Aug 2021 **Stephanie Wang** and Albert Chern, Computing minimal surfaces with differential forms, ACM Transactions on Graphics (SIGGRAPH 2021), ACM Digital Library.

Mar 2020 **Stephanie Wang**, A Material Point Method for Elastoplasticity with Ductile Fracture and Frictional Contact, UCLA Doctoral Dissertation, ProQuest.

Nov 2019 M. Ding, X. Han, **S. Wang**, T. Gast, J. Teran, A thermomechanical material point method for baking and cooking, ACM Transactions on Graphics (SIGGRAPH Asia 2019), ACM Digital Library.

Jul 2019 X. Han, T. Gast, Q. Guo, **S. Wang**, C. Jiang, J. Teran, A Hybrid Material Point Method for Frictional Contact with Diverse Materials, Proc ACM on Computer Graphics and Interactive Techniques (SCA 2019), ACM Digital Library.

Jul 2019 **S. Wang**, M. Ding, T. Gast, L. Zhu, S. Gagniere, C. Jiang, J. Teran, Simulation and Visualization of Ductile Fracture with the Material Point Method, Proc ACM on Computer Graphics and Interactive Techniques (SCA 2019 Best Paper), ACM Digital Library.

Invited talks

Conferences and workshops

Sep 2021 **Geometry Workshop in Obergurgl**, Obergurgl, Austria (**in person**).

Aug 2021 **SIGGRAPH**, (virtual).

Aug 2019 **SCA**, Los Angeles, CA.

Seminars at research institutions

Feb 2022 **NCSU**, Raleigh, NC (virtual).

Nov 2021 **MIT**, Cambridge, MA (**in person**).

Nov 2021 **Autodesk**, (virtual).

Nov 2021 **Online Seminar Geometric Analysis**, (virtual).

Oct 2021 **Toronto Geometry Colloquium**, Toronto, ON (virtual).

Apr 2021 **UCSD (CSE)**, San Diego, CA (virtual).

Jan 2021 **UCSD (CCoM)**, San Diego, CA (virtual).

Dec 2020 **CMU**, Pittsburgh, PA (virtual).

May 2020 **GAMES Webinar**, (virtual).

Nov 2019 **College of the Holy Cross**, Worcester, MA (virtual).

Sep 2019 **Inria Grenoble-Rhône-Alpes**, Grenoble, France.

Aug 2019 **ETH Zürich**, Zürich, Switzerland.

PhD students seminars

Aug 2019 **EPFL**, Lausanne, Switzerland.

Nov 2018 **UCLA**, Los Angeles, CA.

Services

2021-present **External reviewer**.
ACM SIGGRAPH, ACM SIGGRAPH Asia, Eurographics

2021 **Research project mentor**, *Summer Geometry Institute*, (virtual).
Design project advise undergrad researchers about minimal surfaces using both Lagrangian and Eulerian representations.

2018-2020 **President**, *Mathematics Graduate Student Organization, UCLA*.
Coordinate social and academic events and liaise with math faculty and administration representing the math graduate students.

2017-2020 **Math Dept Representative**, *Mathematical and Physical Sciences Student Council, UCLA*.
Student rights advocacy and cross-departmental social events planning.

2016-2018 **Cheif Organizer**, *Women in Math, UCLA*.
Organize social and volunteering events and advocate for women in math dept.

2017 **Creator**, *Women in Math Mentorship Program, UCLA*.
Secure fundings, coordinate regular mixers for undergraduate and graduate fellows to increase connection, awareness and mentorship.

2016-2018 **Fellow Mentor**, *California Teach, UCLA*.

2012-2013 **Vice President**, *Lambda Club, National Taiwan University*.

Skills

Languages English and Mandarin Chinese - bilingual proficiency.

Programming C++, lua, MATLAB, vim, bash, zsh, LaTeX

Tools Houdini, HDK, git, gdb, valgrind, Eigen, tbb, CVX

Mathematics Optimization, differential equations, scientific computing, numerical linear algebra.

Hobbies Rock climbing, hiking, cooking