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Stephanie Wang

Education

Ph.D. and M.S. in Mathematics, *UCLA*, Eugene V. Cota-Robles Fellow. **2014-2020**

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

Positions

Research

Postdoc – with Prof. Albert Chern, *UCSD*, San Diego, CA. **2020-present**
Geometry processing and physical simulation using mathematical insights from geometric measure theory, exterior calculus, partial differential equations, and optimization theory. Mentored PhD students: Mohammad Sina Nabizadeh, Shiyang Jia, Chad McKell.

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

Exchange Study – with Prof. Johan Gaume, *EPFL*, Lausanne, Switzerland. **2019 summer**
Simulations, post-processing, and data analysis of snow and tire interaction; general consultation at the Snow and Avalanche Simulation Laboratory.

Ph.D Study – with Prof. Joseph Teran, *UCLA*, Los Angeles, CA. **2016-2019**
Physics-based simulations of various materials with Material Point Method and Finite Element Method, using continuum mechanics, convex and nonconvex optimization technique, numerical analysis, parallel computing, developing in C++ and Houdini.

Industry

Tech Intern, *Walt Disney Animation Studio*, Burbank, CA. **2018 summer**
R&D for pioneering simulation technology in animated feature films, teaming with VFX artists and developing in C++ and HDK.

Teaching

Assistant Adjunct Professor / Instructor, *UCLA Math Dept*, Los Angeles, CA. **2019-2020**
Taught courses: linear algebra, machine learning (remote) and multivariable calculus (remote).

Teaching Assistant, *UCLA Math Dept*, Los Angeles, CA. **2015-2020**
Taught courses: linear algebra and intro to mathematical proofs, undergrad and grad level numerical methods, intro, intermediate, and advanced C++ programming.

Skills

Programming: C++ (Eigen, tbb, gdb, valgrind), lua, MATLAB (CVX), LaTeX, Vim, git, Houdini

Math: Optimization, differential geometry, numerical and theoretical PDEs, scientific computing

Languages: English and Mandarin Chinese - bilingual proficiency

Selected Publications

Covector fluids. Mohammad Sina Nabizadeh, Stephanie Wang, Ravi Ramamoorthi, and Albert Chern. SIGGRAPH 2022.

DeepCurrents: Learning implicit representations of shapes with boundaries. David Palmer, Dmitriy Smirnov, Stephanie Wang, Albert Chern, and Justin Solomon. CVPR 2022.

Computing minimal surfaces with differential forms. Stephanie Wang and Albert Chern. SIGGRAPH 2021.

A thermomechanical material point method for baking and cooking. Mengyuan Ding, Xuchen Han, Stephanie Wang, Theodore F. Gast, and Joseph M. Teran. SIGGRAPH Asia 2019.

A hybrid material point method for frictional contact with diverse materials. Xuchen Han, Theodore F. Gast, Qi Guo, Stephanie Wang, Chenfanfu Jiang, and Joseph Teran. SCA 2019.

Simulation and visualization of ductile fracture with the material point method. Stephanie Wang, Mengyuan Ding, Theodore F. Gast, Leyi Zhu, Steven Gagniere, Chenfanfu Jiang, and Joseph M. Teran. SCA 2019 (**Best Paper Award**).