





SHUANGGE WANG

3584 S Figueroa St, Los Angeles, CA, 90007

 github.com/shuanggewang |  [linkedin.com/in/shuanggewang](https://www.linkedin.com/in/shuanggewang) |  larrywan@usc.edu |  (323) 600-3948

RESEARCH INTEREST

Dynamical System Optimization
Human-Robot Interaction
Game-Theoretical Manipulation and Influence

EDUCATION

University of Southern California Aug. 2019 - May 2023
B.S. in Electrical and Computer Engineering Los Angeles, CA
B.S. in Applied and Computational Mathematics
GPA: 3.90, Major: 4.00
Advisor: Bhaskar Krishnamachari

Tsinghua University Feb. 2021 - Jun. 2021
Exchange in Electronic Engineering Beijing, China

PUBLICATIONS

1. **S. Wang**, Y. Lyu, J. M. Dolan, "Active Probing and Influencing Human Behaviors Via Autonomous Agents," in *2023 IEEE International Conference on Robotics and Automation (ICRA)*, 2023 (under review)
2. **S. Wang** and B. Krishnamachari, "Optimal Trading on a Dynamic Curve Automated Market Maker," in *2022 IEEE International Conference on Blockchain and Cryptocurrency (ICBC)*, 2022, pp. 1-5 (acceptance rate 18.6%)

RESEARCH

Carnegie Mellon University Robotics Institute Mar. 2022 - Present
Research Fellow Pittsburgh, PA

- Advisor: John M. Dolan
- Devised a coherent theoretical framework that empowers autonomous agent to actively probe human agent to clarify its belief on human's underlying model and to influence human agents for some designated objectives
- Identified two use cases in autonomous driving that overall increases efficiency and driver's experience
- Submitted paper to *2023 IEEE ICRA* for review ([Research Poster](#))

Autonomous Networks Research Group May 2021 - Present
Research Fellow Los Angeles, CA

- Advisor: Bhaskar Krishnamachari
- Proved the path-dependency of trading practices under the dynamic automated market makers and the convergence of slippage when making infinitesimally small transactions
- Devised a polynomial-time dynamic programming based algorithm that solves the optimal trading policy that performs drastically better than baseline algorithms like the exhaustive search or the Lagrange multiplier
- Presented the paper at *2022 IEEE ICBC* and answered questions from peer authors and audiences ([Conference Paper](#), [Presentation Video](#))

PROJECTS

1. Z. Ning, **S. Wang**, V. K. Prasanna, "[Spatial Separable Convolutional Neural Network Parallelization and Acceleration](#)" 2022
2. Harpo: A Firefox User Profile Obfuscation Extension (private due to IP reasons) 2021

PROFESSIONAL ACTIVITIES

USC Dornsife Department of Mathematics

Aug. 2022 - Present

Teaching Assistant

Los Angeles, CA

- Supervisor: Stanislav Minsker, Course: MATH 447: Mathematics of Machine Learning
- Graded homework and programming assignments; held weekly office hours to answer students' questions

USC Viterbi Ming Hsieh Department of Electrical and Computer Engineering

Aug. 2021 - Dec. 2021

Backend Developer

Los Angeles, CA

- Supervisor: Konstantine Psounis, NSF Award Number: 1956435
- Used torch to develop the machine learning agent inference pipeline of a user data obfuscation Firefox extension
- Implemented the extension in REST API and socket server and deployed the application to Docker environment

Siemens

May 2021 - Aug. 2021

Edge Computing Intern

Beijing, China

- Developed "Siemens Industrial Edge WeChat Mini Program" that interactively displays industrial data from Siemens industrial edge devices
- Established MQTT communication environment and deployed data-filtering APIs to cloud

HONORS & AWARDS

Carnegie Mellon University RISS Research Scholarship

2022

A research scholarship at CMU RI with more than 1000 applicants each year and around 5% of acceptance rate.

USC Provost's Undergrad Research Fellowship

2022

USC W.V.T. Rusch Undergraduate Engineering Honors

2022

Graduation with honors

Summa Cum Laude (en route)

2022

Atoms Bits Cells (ABC) Innovation Prize

2022

3 out of 100 candidates

USC Academic Achievement Award

2021-2022

USC IEEE IoT Hackathon Silver

2021

USC Viterbi Dean's List

2020-2022

USC Dornsife Dean's List

2019-2022

SKILLS

Languages C/C++, Python, MATLAB, R, Verilog, MongoDB, CUDA

Tools GitHub, Linux, VMware, Docker, DipTrace, LTspice, Xilinx Vivado, DMM, Oscilloscope

RELEVANT COURSEWORK

Linear Algebra, Probability Theory, Statistics, Analysis, Machine Learning, Optimization, Numerical Methods, Embedded Systems, Linear Circuits, IoT, E&M, Digital Circuits, Parallel Computing, Computer Architecture, Discrete Mathematics, Software Design