Nelson Chen

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EDUCATION

Rutgers University, New Brunswick, NJ — **Sep 2022 – Spring 2027 (Expected)**
Ph.D. in Computer Science (AI and Robotics)

University of California, Berkeley, Berkeley, CA — **Aug 2014 – Aug 2016**
M.S. in Mechanical Engineering (Computational Fluid Dynamics)

Northwestern University, Evanston, IL — **Sep 2010 – Jun 2014**
B.S. in Mechanical Engineering

PROFESSIONAL EXPERIENCE

Dyna Robotics — **May 2025 – Sep 2025**
Research Intern

- Built simulation infrastructure and integration into research workflow for improved testbed and faster research iteration and trained Vision-Language-Action (VLA) benchmark models on LIBERO and Robomimic data using internal DYNA-1 architecture
- Developed dense learning-based reward functions and trained Q-functions for offline reinforcement learning to improve towel flattening's success rate, runtime, and quality

Argo Group International Holdings — **Mar 2020 – Sep 2022**
Senior Data Scientist

- Built framework and trained Named-Entity-Recognition ensemble models using deep learning models such as Faster-RCNN, BERT, and LayoutLM, to extract relevant data chunks from insurance documents

WorkFusion — **Mar 2017 – Mar 2020**
Senior Data Scientist

- Led R&D projects to expand WorkFusion AutoML framework, as well as trained custom models such as data extraction models with NLP and handwritten signature detection with object detection

SELECTED PUBLICATIONS

Peer-reviewed Publications

- **N. Chen**, P. Meng, C. Tang, A. Degay, Z. Brei, R. Kramer-Bottiglio, K. Bekris, & M. Aanjaneya, "Model Predictive Control of Tensegrity Robots via Contact-Aware Graph Neural Dynamics Model". *IROS* (2026) (Under Review)
- **N. Chen**, W. R. Johnson, R. Kramer-Bottiglio, K. Bekris, & M. Aanjaneya, "CableRobotGraphSim: A Graph Neural Network for Modeling Partially Observable Cable-Driven Robot Dynamics". *L4DC* (2026) (Oral)
- W. R. Johnson*, P. Meng*, **N. Chen**, M. Aanjaneya, R. Kramer-Bottiglio, & K. Bekris, "Demonstrating an Open-source, Reproducible System for Tensegrity Navigation among Obstacles". *IEEE RA-L* (2026)
- **N. Chen**, K. Wang, W. R. Johnson, R. Kramer-Bottiglio, K. Bekris, & M. Aanjaneya, "Learning differentiable tensegrity dynamics with graph neural networks". *CoRL* (2024)

RESEARCH EXPERIENCE

Rutgers University – PRACSYS Robotics Lab — **Sep 2022 – Present**
Graduate Research Assistant (Co-advised by Prof. Kostas Bekris and Prof. Mridul Aanjaneya)

- Research on differentiable simulation and control methods for Tensegrity robot platforms with a focus on exploring graph representations of robots and leveraging graph neural networks to learn robot dynamics.

University of California, Berkeley – Computational Fluid Dynamics Lab — **Aug 2014 – Aug 2016**
Graduate Research Assistant (Advised by Prof. Philip Marcus)

- Conducted research in developing new numerical spectral methods for stabilizing and speeding up 3D fluid dynamic simulations

TECHNICAL SKILLS

Programming Languages:	Python (Proficient), Java (Familiar), R (Familiar), Matlab (Familiar)
Machine Learning:	Graph Neural Networks, Data Extraction, Computer Vision, NLP, Scientific Machine Learning
Computational Tools:	PyTorch, Differentiable Physics Simulation, Rigid-Body Dynamics, MuJoCo, Numerical Methods, GPU, Digital Twin, PyG