

SHENGYUN (ANTHONY) PENG

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EDUCATION

Georgia Institute of Technology

Jan. 2022 - present

Ph.D. in Computer Science

Georgia Institute of Technology

Jan. 2021 - Dec. 2022

M.S. in Computer Science | GPA: 4.0/4.0

Tongji University

Sept. 2015 - June 2020

B.Eng. in Civil Engineering | Minor: French

Graduation with honor: Outstanding Graduates in Shanghai, 2020

University of California, Los Angeles

July - Sept. 2019

Cross-disciplinary Scholars in Science and Technology (CSST) Program

SELECTED PUBLICATIONS

[6] S. Peng, W. Xu, C. Cornelius, K. Li, R. Duggal, D. H. Chau, J. Martin. “**RobArch: Designing Robust Architectures against Adversarial Attacks.**” (Under Review)

[5] N. Das, S. Peng, D. H. Chau. “**SkeleVision: Towards Adversarial Resiliency of Person Tracking with Multi-Task Learning.**” In *European Conference on Computer Vision (ECCV) Workshops*, 2022. [Paper]

[4] S. Vellaichamy, M. Hull, Z. J. Wang, N. Das, S. Peng, H. Park, D. H. Chau. “**DetectorDetective: Investigating the Effects of Adversarial Examples on Object Detectors.**” In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Demo*, 2022. [Paper]

[3] S. Peng, L. F. Yan, B. He, Y. Zhou. “**A novel DNN tracking algorithm for structural system identification.**” *Smart Structures and Systems, An International Journal* 27, no. 5 (2021): 803-818. [Paper]

[2] X. Zhang, P. Ye, S. Peng, J. Liu, G. Xiao. “**DSiamMFT: An RGB-T fusion tracking method via dynamic Siamese networks using multi-layer feature fusion.**” *Signal Processing: Image Communication* 84 (2020): 115756. [Paper]

[1] X. Zhang, P. Ye, S. Peng, J. Liu, K. Gong, G. Xiao. “**SiamFT: An RGB-infrared fusion tracking method via fully convolutional siamese networks.**” *IEEE Access* 7 (2019): 122122-122133. [Paper]

PROFESSIONAL EXPERIENCE

Intel Labs / Graduate ML Security Intern [Lab Page]

May 2022 - Aug. 2022

- Worked on DARPA Guaranteeing AI Robustness Against Deception (GARD) project (Evaluation 5).
- Investigated how various architectural components improve deep neural network (DNN) robustness against adversarial attacks.

Georgia Tech / Graduate Research Assistant [Lab Page]

May 2021 - present

- Advised by Prof. Polo Chau

UCLA / Research Assistant [Lab Page]

July 2019 - Dec. 2019

- Proposed a novel anchor-free tracker that achieved SOTA performances on widely-used tracking benchmarks, *e.g.*, OTB2015, VOT2015, VOT2016, and TrackingNet.
- Simulated network pruning and data quantization of tracking networks for future deployment on a FPGA board with general DNN accelerations.

Shanghai Jiao Tong University / Research Assistant [[Lab Page](#)]

July 2018 - Jan. 2020

- Developed visible and infrared fusion methods on both pixel and feature levels, which solved tracking challenges including partial occlusion and low illumination.
- Analyzed four types of occlusion, and built an anti-occlusion correlation filter-based tracker with re-detection mechanism.

Tongji University / Research Assistant [[Lab Page](#)]

Oct. 2017 - Aug. 2020

- Developed a framework from the ground-up which identified structural system with a non-contact measurement method based on a novel Siamese tracker, digital video stabilization, and power spectrum density analyses. The framework only requires consumer-graded cameras, *i.e.*, cellphones' and drones' cameras, and is verified through a shaking table test of a full scale low-damage concrete wall building.
- The proposed framework was published in a top-tier journal, and is widely used by multiple cities for structural health monitoring in China.

AWARDS

National Scholarship (top 2%)	<i>2017 - 2018</i>
Tongji University Excellent Student (top 5%)	<i>2017 - 2018</i>
1 st Prize of Tongji University Scholarship of Excellence	<i>2016 - 2017</i>
1 st Prize in Mathematics Competition of Chinese College Students	<i>Nov. 2016</i>

INVITED TALKS AND PRESENTATIONS

Robust Feature Representation	
DARPA Program Manager's Site Visit to Intel	<i>Sep. 2022</i>
In Search of Robust Architectures against Adversarial Attacks	
Intel Labs (Internship Report)	<i>Aug. 2022</i>
Object Sensing and Cognition for Adversarial Robustness	
GARD 4 th Evaluation PI Meeting (Presented "Leveraging Temporal Coherence" Section)	<i>Apr. 2022</i>
A New Siamese-based Tracking for Structural Health Monitoring	
International Workshop on Data Science in Civil Engineering (Invited Research Talk)	<i>June 2019</i>

TECHNICAL SKILLS

Programming	Python, Java, C, C++, C#, Matlab, SQL
Machine Learning	PyTorch, PyTorch Lightning