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

Tongji University *Sept. 2015 - June 2020*
B.Eng. in Civil Engineering, Minor in French, Graduated with Honors

SELECTED PUBLICATIONS

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

[6] R. Duggal, S. Peng, H. Zhou, D. H. Chau. **"IMB-NAS: Neural Architecture Search for Imbalanced Datasets."** (Under Review) [Paper]

[5] N. Das, S. Peng, D. H. Chau. **"SkeleVision: Towards Adversarial Resiliency of Person Tracking with Multi-Task Learning."** *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."** *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 / Research Intern [Lab Page] *May 2022 - Aug. 2022*

- Worked on DARPA Guaranteeing AI Robustness Against Deception (GARD) project (Evaluation 5).
- Investigated four key architectural components underpinning SOTA CNNs and Transformers that boost adversarial robustness.

Georgia Tech / Ph.D. Researcher [Lab Page] *May 2021 - present*

- Advised by Prof. Duen Horng (Polo) Chau
- Member of the Polo Club of Data Science

UCLA / Undergraduate Researcher [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 / Undergraduate Researcher [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 / Undergraduate Researcher [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 in civil engineering and is widely used by multiple cities for structural health monitoring in China.

AWARDS

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

INVITED TALKS AND PRESENTATIONS

Exploration of Robust Model Architectures
DARPA GARD PI Meeting (Evaluation 6) *May 2023*

Robust Feature Representation
DARPA GARD Program Manager's Site Visit to Intel *Sep. 2022*

In Search of Robust Architectures against Adversarial Attacks
Intel Labs (Internship Report) *Aug. 2022*

Object Sensing and Cognition for Adversarial Robustness
DARPA GARD PI Meeting (Evaluation 4) *Apr. 2022*

A New Siamese-based Tracking for Structural Health Monitoring
International Workshop on Data Science in Civil Engineering (Invited Research Talk) *June 2019*

GRANTS AND FUNDING

Human Capital Management Document Structure Identification and Entity Recognition
PIs: Polo Chau, Chao Zhang, Srijan Kumar
Co-authored $120,000 awarded research proposal for 2022 - 2023

TECHNICAL SKILLS

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