

Yunfei Liu

PH.D. STUDENT · UNIVERSITY OF MICHIGAN

✉ jasonliuyf@gmail.com | 🌐 www.yfliu.net | 📄 yunfei-liu

Education

University of Michigan

Ann Arbor, US

PH.D IN ELECTRICAL & COMPUTER ENGINEERING

Present

- Supervisor: Prof. Aline Eid
- Track: Signal & Image Processing and Machine Learning

The Hong Kong Polytechnic University

Kowloon, Hong Kong

B.SC. (HONS) IN COMPUTING

2020-2024

- The First Honour (Highest Distinction)

Research Experience

University of Michigan - Department of Electrical & Computer Engineering

Ann Arbor, US

SUPERVISOR: PROF. ALINE EID

Present

- **Research Focus:** mmWave radar, LiDAR and MIMO
- **Primary Responsibilities:**
 - Machine learning
 - Data-driven modeling and analysis
 - 3D Visualization

The Hong Kong Polytechnic University - Department of Computing

Hong Kong

SUPERVISOR: PROF. HENRY CHUN BUN CHAN

Dec. 2020 - Jun. 2024

- **Research Focus:** Indoor positioning and communications using Bluetooth Low Energy and Ultra-wideband.
- **Primary Responsibilities:**
 - Contributing to research ideas and methodology. Designing and implementing experiments. Collecting and processing data. Assisting in drafting academic papers.
- **Special Skills:**
 - Proficient in building mathematical models.
 - Skilled in coding for simulation and real data processing, mainly using Python.
- **Additional Research Project:** Smart classroom initiative.
 - Objective: Utilizing video analysis of student faces to gauge concentration levels in online classrooms.
 - Role: Project coordinator and team leader.
- **Additional Project:** ShopChain.
 - Objective: To revolutionize indoor retail navigation and marketing using indoor positioning.
 - Role: Coordinating and leading the implementation with a diverse team.

University of Waterloo - Department of Civil and Environmental Engineering

Canada

ADVISOR: PROF. PEJOOHAN TAVASSOTI

May 2023 - Aug. 2023

- **Project Focus:** Remote pavement defect detection using drones.
- **Technology Used:** Drones equipped with LiDAR modules for capturing photos and cloud maps of pavements.
- **Objective:** Automating the detection and alerting of pavement defects to reduce costs using computer vision and machine learning.
- **Primary Responsibilities:**
 - Designing methodology and experiments. Conducting experiments and data collection. Writing code for data analysis.

City University of Hong Kong - Department of Accountancy

ADVISOR: PROF. OLEG KIRIUKHIN

Hong Kong
Sep. 2022 - Present

- **Project Focus:** Research in quantitative finance.
- **Key Topics:**
 - Stochastic modeling.
 - Kalman filtering.
 - Stochastic simulations.
 - Analysis of financial time series.
- **Tools and Technologies:**
 - Extensive experience with the "S&P Compustat Fundamentals" database.
 - Proficiency in Python for modeling and simulation.
- **Primary Responsibilities:**
 - Developing models in Python. Implementing these models for data analysis and simulations.

Publications

- Y. H. Ho, **Y. Liu**, C. Zhang, Y. Sartayeva and H. C. B. Chan, "Hybrid Learning for Mobile Ad-Hoc Distancing/Positioning Using Bluetooth Low Energy," in IEEE Internet of Things Journal, vol. 10, no. 14, pp. 12293-12307, July 15, 2023, doi: 10.1109/JIOT.2023.3247299.
- Y. Sartayeva, **Y. Liu**, Y. H. Ho and H. C. B. Chan, "Positioning Vectors for Mobile Ad-Hoc Positioning," 2023 IEEE 47th Annual Computers, Software, and Applications Conference (COMPSAC), Torino, Italy, 2023, pp. 512-517, doi: 10.1109/COMP-SAC57700.2023.00074.
- Y. Liu**, L. F. Cheung, W. L. Lam and H. C. B. Chan, "Detection of Online Student Behavior Using Emotion and Eye/Head Movement," 2022 IEEE International Conference on Teaching, Assessment and Learning for Engineering (TALE), Hung Hom, Hong Kong, 2022, pp. 264-269, doi: 10.1109/TALE54877.2022.00051.
- Y. H. Ho, **Y. Liu**, C. Zhang and H. C. B. Chan, "BlueTrk+ for Tracking Presence and Position," in IEEE Communications Magazine, vol. 59, no. 8, pp. 80-85, August 2021, doi: 10.1109/MCOM.021.2100266.

Awards, Sponsorships & Grants

2024	HKSAR Government Scholarship - Outstanding Performance , HKSAR Government	HK\$ 80,000
	EDPS Innovative Scholarship , EDPS Systems Ltd.	HK\$ 20,000
	Syndicate Lab and Alliances Scholarship , PolyU	HK\$ 10,000
2023	Mitacs Globalink Research Internship Award , Mitacs	CA\$ 9,000
	The Hong Kong Polytechnic University Scholarship 2022-2023 , PolyU	HK\$ 40,000
	HKSAR Government Scholarship - Reaching Out Award , HKSAR Government	HK\$ 10,000
	Dr Winnie S M Tang-PolyU Student Innovation & Entrepreneurship Scholarship , PolyU	HK\$ 10,000
	Commercial Radio 50th Anniversary Scholarship , PolyU	HK\$ 3,000
	Dean's Honours List , PolyU, Faculty of Engineering	
2022	The Hong Kong Polytechnic University Scholarship 2021-2022 , PolyU	HK\$ 40,000
	Presidential Student Leadership Award , PolyU	
2021	STEM Internship Scheme - Innovation & Technology Fund , HKSAR Government	HK\$ 11,550
	UG Summer Research Abroad Sponsorship , PolyU	HK\$ 7,500
	Study Abroad Fund , PolyU	HK\$ 5,000
	Proof-of-Concept Fund , PolyU	HK\$ 5,000
	Dean's Honours List , PolyU, Faculty of Engineering	
2019	The First Prize - Chinese Physics Olympiad , Chinese Physics Society	