



TIAN ZHANG

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Ph.D. Candidate, Technion – Israel Institute of Technology

💡 RESEARCH INTERESTS

3D vision and geometric learning methods that make real-world point cloud data more reliable for mapping, modeling, and interpretation. My recent work centers on developing representations native to 3D points and facilitating their understanding.

🎓 EDUCATION

- Technion – Israel Institute of Technology**, Haifa, Israel 2023 – Present
Ph.D. Candidate in Mapping and Geo-Information Engineering
- Technion – Israel Institute of Technology**, Haifa, Israel Oct. 2020 – Mar. 2023
M.Sc. in Mapping and Geo-Information Engineering
summa cum laude; GPA 94.2/100
- Wuhan University**, Wuhan, China Sep. 2017 – Jun. 2020
Master of Engineering in Navigation
- Wuhan University**, Wuhan, China Sep. 2013 – Jun. 2017
Bachelor of Engineering in Geomatics Engineering

📄 PUBLICATIONS

- Differentiable deep consistency for point cloud registration** Jul. 2026
ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences. With Sagi Filin.
- OASIS-Reg: Orientation-, Attention-, and Saliency-driven Learning for Invariant Scan 3D Registration** 2026
Under review at Pattern Recognition. With Sagi Filin.
- Edge-aware joint neural denoising and normal estimation for mobile and handheld laser point clouds** Jul. 2025
ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences. With Sagi Filin.
- Spatio-temporal registration of plants non-rigid 3-D structures** Oct. 2023
ISPRS Journal of Photogrammetry and Remote Sensing. With Bashar Elnashef and Sagi Filin.
- Deep-learning-based point cloud upsampling of natural entities and scenes** 2022
The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences. With Sagi Filin.
- High fidelity edge aware normal estimation for low resolution and noisy point clouds of heritage sites** 2022
ISPRS Congress 2022. With Joelle Abu-Hani and Sagi Filin.
- Shape preserving noise attenuation model for 3-D-modeling of heritage sites by portable laser scans** 2022
3D-ARCH 2022. With Joelle Abu-Hani and Sagi Filin.

Leaf-wood separation and tree skeletonization from low resolution and noisy 3-D point clouds

2021
SilviLaser 2021. With Sagi Filin.

A Fast Algorithm for Rail Extraction Using Mobile Laser Scanning Data Dec. 2018
Remote Sensing. With Yidong Lou, Jian Tang, Weiwei Song, Yi Zhang, and Liang Chen.

📌 TALKS AND PRESENTATIONS

VNPRFormer: Lightweight Rotation-Invariant Vector-Neuron Transformer for Large-scale LiDAR Place Recognition Jan. 19, 2026

Oral presentation at The Israel Navigation Workshop and Exhibition (INWE26), Daniel Hotel, Herzliya.

Lightweight rotation-invariant transformer for place recognition Jan. 28, 2026

Presentation listed by the user for the 6th Israeli Smart Transportation Research Center Annual & Students Conference, Technion.

Leaf-wood Separation and Tree Skeletonization from Low Resolution and Noisy 3-D Point Clouds 2021

Oral paper at SilviLaser 2021.

🏆 HONORS AND AWARDS

ISPRS Best Young Author Award Jul. 2026

Third Place, Department Faculty Research Day May 2025

Full Scholarship at Technion (5/5 portions; above the usual 4/5) 2020 – 2023

ISPRS Travel Grant for the Nice Congress 2022

National Scholarship for M.Eng. students, Ministry of Education of P.R. China 2019

First Prize Scholarship, Wuhan University 2019

2nd Prize, China Graduate Contest on Application, Design and Innovation of Mobile Terminal Oct. 2018

Graduate Entrance Scholarship, Wuhan University 2017

Scholarship for Outstanding Students 2014 – 2016

👥 ACADEMIC SERVICE

- Peer reviewer for *The Visual Computer*, *Multimedia Systems*, and *IEEE Open Journal of Vehicular Technology*.
- ISPRS member.

⚙️ TECHNICAL STRENGTHS

- Research computing: PyTorch, CUDA, high-performance slurm cluster computation.
- Large scale point cloud processing: custom CUDA kernels, C++/Python integration with pybind11, efficient training and inference pipelines.
- Core programming: Python, C++, C.
- Research areas: deep learning, 3D vision, geometry processing, point cloud understanding, scan registration.
- Languages: English (IELTS 7.5 overall, speaking 7.0), Mandarin.