HAKOB TAMAZYAN

tam.hak27@gmail.com | +374 93 766 085
LinkedIn | Google Scholar

EXPERIENCE

Computer Vision and Robotics Team Lead, YerevaNN Lab *Apr 2023 – Present*

- Trained χViT, a self-supervised vision foundation model for remote sensing, entirely from scratch using distributed training across multiple nodes.
- Develop and modify multimodal foundation models for drone navigation as vision-language-action models.
- Create history-aware aerial navigation methods and use simulation-generated data to train instruction-conditioned action prediction.
- First author of GeoCrossBench and research on map-grounded, history-aware aerial navigation; coauthor of foundation-model evaluation and cross-modal retrieval benchmarks.
- Lead a seven-person computer vision and robotics team, combining hands-on model development with research supervision.

Staff Machine Learning Engineer, Mobeus *Nov 2022 – Mar 2023*

- Developed real-time recognition methods for static and dynamic hand gestures.

Krisp *May 2019 – Nov 2022*

Staff Machine Learning Engineer · Jan 2022 – Nov 2022
Senior Machine Learning Engineer II · Jan 2020 – Dec 2021
Machine Learning Scientist/Engineer · May 2019 – Dec 2019

- Co-led the development of real-time video segmentation for real-time background replacement.
- Built video matting models from scratch to estimate foreground opacity and produce finer subject boundaries.
- Designed the end-to-end ML architecture for the video segmentation and matting project, covering model development, training, and inference.
- Optimized inference through post-training quantization and quantization-aware training (QAT), balancing computational efficiency with model quality.
- Contributed to audio dereverberation and noise-cancellation research for speech enhancement.

Machine Learning Engineer, BetConstruct *Sep 2017 – Apr 2019*

- Built models for time-series forecasting, image classification and clustering, and football-match object detection.
- Modeled user behaviour, including churn and addiction-risk prediction.

C++ Software Engineer Intern, Mentor Graphics *Nov 2016 – Apr 2017*

- Completed a software-engineering internship focused on C++ development.

EDUCATION

PhD in Applied Mathematics *2021 – 2024*

Yerevan State University | Specialization: Mathematical Logic

MSc in Discrete Mathematics & Theoretical Computer Science *2019 – 2021*

Yerevan State University | GPA 3.95/4.00

BSc in Informatics & Applied Mathematics *2015 – 2019*

Yerevan State University | GPA 3.90/4.00

SELECTED PUBLICATIONS

- Enhancing Aerial Vision-Language Navigation with Map Grounding and History Awareness — ICLR 2026 ES-Reasoning.
- GeoCrossBench: Cross-Band Generalization for Remote Sensing — ICML 2025 TerraBytes (Spotlight)
- Towards Fine-tuning a Small Vision-Language Model for Aerial Navigation — NeurIPS 2025 Embodied World Models.
- ShipCross-ID: Bridging SAR and Multispectral Imagery for Ship Re-Identification — ECCV 2026 TerraBytes II.
- HOSS-Bench: Open-Set Cross-Modal Vessel Re-Identification Benchmark — ICLR 2026 ML4RS.
- Beyond Data Size: Exploring the Impact of Dataset Diversity and Density in Self-Distillation Learning — ICLR 2026 DATA-FM.
- Less is More? Data Specialization for Self-Supervised Remote Sensing Models — ICML 2025 DataWorld and TerraBytes.
- Teaching Visual Language Models to Navigate Using Maps — ICLR 2025 Robot Learning.
- Benchmarking Robustness of Foundation Models for Remote Sensing — ECCV 2024 OODCV.
- Analyzing Local Representations of Self-Supervised Vision Transformers — arXiv:2401.00463, 2024.
- A Hierarchy of Determinative Sequent Systems with Different Substitution Rules — Pattern Recognition and Image Analysis, 2024.
- The Relationship Between the Proof Complexities of Linear Proofs in Quantified Sequent Calculus and Substitution Frege Systems — Mathematical Problems of Computer Science, 2023.

HONOURS & AWARDS

- International Mathematical Olympiad (**IMO** 2015) — Silver Medal
- International Mathematical Olympiad (**IMO** 2014) — Honourable Mention
- Zhautykov Mathematics Olympiad (**IZhO**, 2015) — Silver Medal
- **ICPC** NEERC (2016, 2019, 2020) — Third Diploma
- **NCUMC** (2019) — Second Diploma

ACADEMIC ACTIVITIES

- **Program Lead** — Vision-Language Foundation Models for Aerial Robotics
- **ICLR 2026 Peer Reviewer**
- **Teaching Assistant** — Mathematical Logic, Yerevan State University (2021–2022)
- **ICML 2025 Spotlight** — Oral presentation
- **DataFest Yerevan Speaker** (2020, 2024)

TECHNICAL SKILLS

Programming: Python, C++.
Frameworks: PyTorch, TensorFlow, Keras, OpenCV, scikit-learn.
Training: Multi-node distributed training, self-supervised pretraining
Research: Vision-language-action models, aerial navigation, multimodal learning, model evaluation
Deployment: Real-time computer vision, segmentation and matting, quantization and QAT

LANGUAGES

Armenian — Native | English — Professional | Russian — Intermediate