Ilia Chelak Ph.D. student at UTokyo

	Education
2025 – present	 Ph.D. in Computer Vision, Tokyo University, Tokyo, JP Focus: real-time multi-view 3D reconstruction • Implicit Neural Representations Working at Sato Lab under the supervision of Yoichi Sato and Yasuyuki Matsushita.
2022 - 2024	 M.Sc. in Data Science, University of Helsinki, Helsinki, FI, GPA 4.8/5 o Focus: Computer Vision • Bayesian ML • Statistical inference o Thesis: "PriorSDF: Fast and Accurate 3D Shape Recovery by SfM-informed Neural SDFs"
2017 - 2021	 B.Sc. in Computer Science, St. Petersburg Polytechnic University, RU, GPA 4.8/5 • Thesis: "Ringed seals re-identification with convolutional neural networks."
	Experience
Mar 2022 –	Computer Vision Research Engineer, Watermarked
Apr 2025	 <u>Achieved</u> real-time resolution-independent watermarking for images and videos. <u>Boosted</u> decoding accuracy after distortions by 60% for images, videos, and audios.
Oct 2023 –	Research Student, Osaka University Computer Vision Lab
Feb 2024	 <u>Researched</u> 3D reconstruction from multi-view images under Professor Yasuyuki Matsushita. <u>Introduced</u> Structure-from-Motion (SfM) initialization to neural SDF reconstruction, cutting training time from 30 min to 7 min and capturing sub-millimetre details (see thesis).
Mar 2020 – Feb 2022	 Volunteer Researcher, CVPR Lab, LUT University, Lappeenranta, Finland <u>Collaborated</u> on the CoExist ringed-seal re-identification project under Professor Kälviäinen. <u>Improved</u> training speed by 10 % through an efficient loss function.
	• <u>Developed</u> EDEN , a global pooling layer that raised accuracy by 2 % in ringed-seal image retrieval (see publications).
	Scholarships
2025	 Tokyo University SPRING GX scholarship Stipend ¥180,000 / month + ¥360,000 / year research funds (~\$1,250 & ~\$2,500)
2023	 JASSO Student Exchange Support Program Monthly stipend ¥80,000 (~\$550) per month for 6 months.
2022	 University of Helsinki scholarship Full tuition fee waiver (worth €30,000; ~10% acceptance rate)
2020	 FIRST+ (Finnish–Russian) scholarship • FIRST+ mobility grant (€560 / month) for 5-month exchange
	Publications
	Nepovinnykh, E., Chelak, I. , Immonen, V., Eerola, T., Kälviäinen, H., Kholiavchenko, M., Stewart, C. (2024). Species-Agnostic Patterned Animal Re-identification by Aggregating Deep Local Features. In <i>International Journal of Computer Vision</i> .

Nepovinnykh, E., Eerola, T., Kälviäinen, H., **Chelak, I.** (2024). NORPPA: NOvel Ringed Seal Re-Identification by Pelage Pattern Aggregation. In *Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision (WACV) Workshops.*

Nepovinnykh, E., **Chelak, I.**, Lushpanov. A., Eerola, T., Kälviäinen, H., & Chirkova, O. (2022). Matching individual Ladoga ringed seals across short-term image sequences. *Mammalian Biology*.

Chelak, I., Nepovinnykh, E., Eerola, T., Kälviäinen, H., & Belykh, I. (2021). EDEN: Deep Feature Distribution Pooling for Saimaa Ringed Seals Pattern Matching. *In Cyber-Physical Systems and Control II*, **Best Paper – 1st Runner-Up Award.**

Skills

Tech stack Python, PyTorch, OpenCV, Docker

Computer 3D reconstruction, image/video steganography, image retrieval, metric learning Vision

Languages English (proficient), Russian (native), Japanese (intermediate)