Oleg Magnes

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Summary

- 5 years of experience in Computer Vision and Natural Language Processing.
- Looking for a full-time position in Machine Learning / Deep Learning.

Education

Technical University of Munich • Munich, Germany — Apr 2023 – now
Master of Science • *Mathematics in Data Science*

KAIST • Daejeon, Republic of Korea — Sep 2014 – Aug 2019
Bachelor of Science • *Mathematics*

Saint Petersburg State University • Saint Petersburg, Russia — Sep 2009 – Jun 2013
Bachelor of Science • *Molecular Biology*

Work Experience

Tech Specialist I – Motius • Germany — Nov 2024 – Oct 2025
Computer Vision and LLM-related projects
- Integrated CLIP to refine tracking and matching for LLM-generated outputs.
- Applied open vocabulary object detection models to enhance scene understanding.
- Added Graph-RAG for a chat-based LLM agent system with a Neo4j database.
- Built a Streamlit app for functional data clustering.

Working Student | Sustainable AI – itemis • Germany — Jun 2024 – Aug 2024
Neural Architecture Search
- Developed a neural architecture search pipeline with Microsoft NNI, supporting multiple objectives, diverse strategies, and custom search spaces.

Research Engineer – Mars Auto • Republic of Korea — Dec 2020 – Nov 2022
Computer Vision: obstacle detection and driver monitoring for self-driving trucks
- Developed a real-time driver monitoring system for distraction detection.
- Implemented a scaled monocular depth estimation model.
- Enhanced obstacle detection with radar data and 3D shape fitting.

Machine Learning Engineer – Skelter Labs • Republic of Korea — Sep 2018 – Nov 2020
Natural Language Processing: machine reading comprehension
- Achieved first place in KorQuAD-1 question-answering open leaderboard.
- Introduced knowledge distillation (Tiny-BERT) to make smaller models without a significant decrease in accuracy.
- Finetuned the English question-answering model to rank 5th worldwide in SQuAD-2 open leaderboard.

Teaching

Teaching Assistant – TUM • Munich, Germany — Oct 2023 – Mar 2025
Introduction to Deep Learning: graduate course
- Managed the course for over 1500 students for three semesters.
- Conducted Q&A sessions and provided online support to students.

Skills

- **Programming languages:** Python (including NumPy and OpenCV), C++
- **ML frameworks:** PyTorch, Keras, TensorFlow
- **Vision:** depth estimation, object detection, image segmentation, 3D shapes optimization, 3D reconstruction, implicit neural representations, hypernetworks
- **Language:** machine reading comprehension, semantic clustering, LLM-agents
- **Conventional ML:** Iterative Closest Point (ICP), Principal Component Analysis (PCA)
- **Miscellaneous:** Unix systems, Git/Github, ssh, Streamlit, Docker

Academic Projects

Neural Network Inductive Biases for High-fidelity 3D Reconstruction – TUM — Nov 2024 – July 2025
Master's thesis • github.com/ttaggg/inductive_biases

- Trained implicit neural representations for 3D scenes reconstruction from the point clouds.
- Constructed a neural network-based scene representation capable of encoding fine-grained 3D scene details by exploring various inductive biases of neural network architectures.

Analysis of Iterative Closest Point Algorithms – TUM — Jun 2024 – Jul 2024
3D Scanning & Motion Capture • github.com/ttaggg/icp

- Implemented multiple ICP algorithm variants in C++ with diverse sampling methods, correspondence strategies, and objective functions.
- Performance evaluated in 3D reconstruction and mesh alignment tasks.

3D Affine Transformations on Neural Fields – TUM — Oct 2023 – Feb 2024
Advanced Deep Learning for Computer Vision • github.com/ttaggg/3datonf

- Developed an approach to apply rotations and translations to implicit neural representations of 2D and 3D objects using HyperNetworks.

Improving Tissue-Specific Splicing Prediction with Transformers – TUM — Apr 2023 – Jul 2023
Machine Learning for Regulatory Genomics course

- Showcased that transformers are capable of solving tissue-specific splicing prediction and can outperform current methods.

On the curve graph of a torus and other sporadic surfaces – KAIST — Apr 2018 – Jun 2018
Bachelor's thesis

- About minimal geometric intersections of non-homotopic simple closed curves.

Revealing new components of the circadian clock using machine learning – KAIST — Jan 2017 – Aug 2017
Internship under the supervision of Prof. Jae Kyoung Kim

- Analyzed genomic data for novel candidates for circadian core clock genes.
- Suggested three candidates for experimental verification as a result of the project.
- Methods: Ensemble-SVM, Bayesian classifiers, random walk with restart

Identification of significant mutations and pathways in various lymphoma types – DKFZ (German Cancer Research Center) — Jul 2014 – Aug 2014
Intenship

- Suggested several candidates for experimental verification.

Role of the TRPC1 protein in calcium homeostasis deregulation in familial Alzheimer's disease – St. Petersburg State University — Sep 2012 – Jun 2013
Bachelor's thesis

- Demonstrated that TRPC1 can be another candidate for the cases of familial Alzheimer's disease when currently known disease-related genes are not affected.

Neurexin-neuroligin interaction and signaling – EPFL — Jul 2012 – Aug 2012
Summer Research School

- Showed that neurexin-3β is processed by α- and γ-secretases independently from neurexin-neuroligin interaction.

Languages

- **English:** Full professional proficiency (TOEFL 103, TOEIC 990)
- **German:** Beginner (work in progress)
- **Korean:** Pre-intermediate (TOPIK Level 2)
- **Russian:** Native