Timur Khairulov

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AutoML Lab | ml.cau.ac.kr | Supervisor: Professor Jaseung Lee

Publications

Journal Articles

1. ChainImputer: A Neural Network-Based Iterative Imputation Method Using Cumulative Features
   MDPI Symmetry | 2025 | DOI: 10.3390/sym17060869

Conference Papers

1. Diffusion Model-Based Generative Pipeline for Children Song Video
   IEEE International Conference on Consumer Electronics (ICCE) | 2025 | IEEE Xplore
2. Review of current approaches in the area of object detection for autonomous vehicles
   Institute of Electronics and Information Engineers (IEIE) | 2024 | DBPIA

Under Review

1. Information-Theoretic Unsupervised Feature Selection for Constructing Taxonomy Tree
2. BAGen: Background Animation Generation for LLM-Generated Lyric Towards Children's Songs
3. Efficient Multi-Scale Network for Real-Time Crack Segmentation: Achieving High Accuracy-Speed Trade-off
4. Efficient Cheap All-Layer Aggregation Network for Time-Sensitive Time Series Classification

Theses

1. **Master's Thesis:** A Study on Maximizing Joint Entropy and Pattern Discrimination for Unsupervised Feature Selection | *Expected 2025*
2. **Bachelor's Thesis:** Recognition of road markings, signs and traffic lights using deep learning models | *2023*

Education

2024 - Present	MS in Artificial Intelligence at **Chung-Ang University** CAYSS scholarship recipient	(GPA: 4.22/4.5)
2018 - 2023	BS in Computer Science at **Electrotechnical University "LETI"**	(GPA: 4.3/5)
2022 - 2023	Exchange Semester at **Inha University** Certificate	(GPA: 3.9/4.5)

Work Experience

C++ Software Developer LTE L1, YADRO May 2023 - February 2024

– 4G Base Station Development, used AVX and C++ for developing real-time modules

Teaching Experience

Teaching Assistant, Computer Vision, Chung-Ang University Spring 2025

– Prepared course materials including PowerPoint presentations, designed and graded examinations, evaluated student homework assignments

Projects

BAGen: Automatic production and visualization of children songs GitHub

Python, PyTorch | January 2025 | End-to-end generation of content for children with GUI and TUI support

Feature Selection experimental code GitHub

Matlab | August 2025 | Collection of Unsupervised Feature Selection algorithms and experiments used in our recent publications

Prim's Algorithm Visualizer GitHub

C++, SFML, Make | April 2023 | Interactive graph creation and Prim's algorithm visualization using computer graphics

Menu Management Application Demo

Dart, Flutter, Firebase | January 2023 | Cross-platform CRUD application for managing cafe menu prices, deployed via Firebase Hosting

Research Interests

- Reinforcement Learning
- Autonomous Systems
- Feature Selection and Information Theory
- Efficient Network design

Technical Skills

Programming	C/C++, Python, MATLAB, Dart, SQL
Machine Learning	PyTorch, NumPy, Pandas, Scikit-learn, OpenCV
Development	Git, Linux, CMake, Docker, Qt, Flutter
Systems	Parallel Programming, Operating Systems, Computer Architecture
Languages	English (B2 - TOEIC Certificate), Russian (Native), Korean (Basic)

Awards and Honors

2024 - Present CAYSS Scholarship Recipient at **Chung-Ang University**

2018 - 2023 Bachelor's Degree Scholarship Recipient at **Electrotechnical University "LETI"**

Relevant Coursework

CS 285 Deep Reinforcement Learning at **UC Berkeley**

Last updated: September 10, 2025