Ábel Ilyés-Kun

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Education

2023– **RWTH Aachen University** — *MSc Computer Science*

- **Master's thesis** (ongoing): "Real-time Human-AI Improvisation over Jazz Standards" — supervised by Prof. Dr. Holger Hoos (Chair for Artificial Intelligence Methodology)
- Research seminar on state-space models — supervised by Prof. Hector Geffner (Representation, Learning, and Planning Lab)

Fall 2024 **KAIST** — *MSc Computer Science (Exchange Semester)*

- DUO-Korea Scholarship

2019–2023 **RWTH Aachen University** — *BSc Computer Science*

- **Bachelor's thesis**: "A Survey of Optimization Tools and Objective Functions for Tuning Recurrent Spiking Networks with Dendritic Subunits" — supervised by Prof. Dr. Abigail Morrison (Institute for Advanced Simulation, Forschungszentrum Jülich)

2016–2019 **Goethe Gymnasium Bad Ems** — *A levels (Abitur)*

- Majors: English, Mathematics and Physics
- Graduate prize for physics (DPG-Abiturpreis)

Publications

2025 Lehmkuhl, J., Ilyés-Kun, Á., Bremes, N., Özaltan, C. K., Muthers, F., & Yuan, J. "Generating Piano Music with Transformers: A Comparative Study of Scale, Data, and Metrics." *NeurIPS 2025 Workshop on AI for Music: Where Creativity Meets Computation* (archived paper, poster presentation)

Research & Work Experience

2022–2023 **Bachelor's Thesis at Institute for Computational and Systems Neuroscience**

- Hyperparameter optimization for clustered spiking neural network with Optuna
- Setting up MySQL database for parallel optimization on JURECA supercomputer
- Managing job scripts in cluster environment with Slurm

2021–2023 **Tutor at Research Group for Programming Languages and Verification**

- Tutored students in Software Development (Java), Functional Programming (Haskell), Logic Programming (Prolog) and software verification
- Conducted weekly classes and assessed coding assignments

Fall 2021 **Lab Course at Cyber-Physical Mobility Lab**

- Implemented trajectory planning and collision avoidance for model vehicles in C++
- Organized workflow in team of six with Scrum and Git

March 2020 **Internship at BWI GmbH (IT solutions for Federal Government)**

- Overview of project management and project organization (Scrum)
- Introduction to current JIRA projects at the company

Programming Stack

Main Languages	Python, Java
Project Experience in	Bash, C++, C#, SQL
Frameworks	PyTorch, Librosa, NumPy, SciPy, Pandas, Matplotlib, Seaborn
Tools & Systems	Linux, Git, Slurm, Jupyter, Unity

Languages & Hobbies

Languages	German (native), Hungarian (native), English (professional), French (intermediate), Dutch (elementary), Romanian (elementary)
Extracurricular Activities	• Keyboardist at “창작동화” Jazz Band (2024–2025) — regular KAIST campus performances and a featured performance at a jazz bar in Seoul • Tennis Club Mixed-Vaals (2022) • Pianist at “The Bluebirds” Jazz Band (2017–2019) • Rowing Club “Ruderverein Bad Ems” (2016–2019)
Interests	Jazz piano, classical piano, transcribing music, K-pop, video editing, psychology, football, table tennis, tennis, running