



DÁNIEL HORVÁTH

Phd defended
in computer science

PERSONAL DATA

Date of Birth: 7th of July, 1994
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[Google Scholar](#)
[YouTube](#)



LANGUAGE SKILLS

- Hungarian: native
- English: IELTS ACADEMIC 7.5 (C1)
- French: DELF B1 (85%)
- German: basic conversational (~A1/A2)

SCHOLARSHIPS

- 2017 - 2018: Hungarian National Higher Education Scholarship
- 2017: New Hungarian National Excellence Program
- 2016 - 2017: Hungarian Republican Scholarship
- 2016: BME Faculty of Mechanical Engineering Scholarship

MAIN RESEARCH FIELDS

- Sim2Real Transfer Learning
- Reinforcement Learning in Robotics
- Computer Vision and Object Detection

List of publications is attached

PROGRAMMING SKILLS

- Main: Python, C/C++, ROS
- Studied: Wolfram Mathematica, SQL, LabVIEW, Web development (HTML, CSS, JavaScript, PHP), PLC, MATLAB, C#



EXPERIENCE

Hungarian Research Network Institute for Computer Science and Control

Research Associate | July 2020 - present

Robotics, Transfer and Reinforcement Learning

System Engineer | Sept 2016 - Jan 2020

Computer Vision, System Design, Industrial Cobots

Internship | July 2016 - Aug 2016

Automated Guided Vehicles (AGV)

Student Supervisor and TA | Feb 2017 - present

Transfer learning, computer vision, reinforcement learning, deep learning, robotics



EDUCATION

Eötvös Loránd University, Budapest

Phd in Computer Science | 2020 - 2025 (summa cum laude)

Advancing Data-Driven Robotics with Transfer and Curriculum Learning

★ **École des Mines de Paris, PSL University**
Campus France Scholarship | 2022 - 2023

Budapest University of Technology and Economics
Mechatronics BSc & MSc | 2013 - 2019 (highest honours)

★ **Technical University of Denmark, Copenhagen**
Campus Mundi Scholarship | Fall of 2018

★ **Otto-von-Guericke University, Magdeburg**
Erasmus+ Scholarship | Spring of 2018



AWARDS

2023: **HUN-REN SZTAKI Publication Award**

2021: **Young Author Award finalist at the INCOM 2021 Symposium in Budapest, Hungary**

Visual Servo Guided Cyber-Physical Robotic Assembly Cell

2017: **3rd place at the Scientific Student' Conference**
University level; Digital Twin Model in Robotics

2016 - 2017: **1st place at the XXXIII. Hungarian National Scientific Students' Conference, 1st place at the University Level, and Special Prize of Audi Hungaria**
Development and Implementation of Navigation and Control Algorithm for AGV Robots in a Smart Factory

2016: **4th place at the WRO Advanced Robotics Challenge** | *Robot Bowling; Hungarian National level*

2016: **1st place at the Micromouse Challenge**
Software category; University level

List of Publications

JOURNAL PAPERS

D. Horváth, G. Erdős, Z. Istenes, T. Horváth, and S. Földi, "Object Detection Using Sim2Real Domain Randomization for Robotic Applications," *IEEE Transactions on Robotics*, vol. 39, no. 2, pp. 1225–1243, Apr. 2023, issn: 1941-0468. doi: [10.1109/TRO.2022.3207619](https://doi.org/10.1109/TRO.2022.3207619).

D. Horváth, J. Bujalance Martín, F. Gábor Erdős, Z. Istenes, and F. Moutarde, "HiER: Highlight Experience Replay for Boosting Off-Policy Reinforcement Learning Agents," *IEEE Access*, vol. 12, pp. 100 102–100 119, Jul. 2024, issn: 2169-3536. doi: [10.1109/ACCESS.2024.3427012](https://doi.org/10.1109/ACCESS.2024.3427012).

G. Erdős, K. Abai, R. Beregi, **et al.**, "Enabling Technologies for Autonomous Robotic Systems in Manufacturing," *Transactions of Nanjing University of Aeronautics and Astronautics*, vol. 41, no. 4, pp. 403–431, Aug. 2024, issn: 1005-1120. doi: [10.16356/j.1005-1120.2024.04.001](https://doi.org/10.16356/j.1005-1120.2024.04.001).

CONFERENCE PAPERS

D. Horváth, K. Bocsi, G. Erdős, and Z. Istenes, "Sim2Real Grasp Pose Estimation for Adaptive Robotic Applications," in *the 22nd IFAC World Congress*, ser. IFAC-PapersOnLine, vol. 56, 2023, pp. 5233–5239. doi: [10.1016/j.ifacol.2023.10.121](https://doi.org/10.1016/j.ifacol.2023.10.121).

G. Erdős, **D. Horváth**, and G. Horváth, "Visual Servo Guided Cyber-Physical Robotic Assembly Cell," in *the 17th IFAC Symposium on Information Control Problems in Manufacturing (INCOM)*, ser. IFAC-PapersOnLine, vol. 54, Jan. 2021, pp. 595–600. doi: [10.1016/j.ifacol.2021.08.068](https://doi.org/10.1016/j.ifacol.2021.08.068).

M. Hajós and **D. Horváth**, "Robotos Pakolási Feladat Megoldása Környezetérzékeles Segítségével," in *Nemzetközi Gépészeti Konferencia (OGÉT)*, Apr. 2020, pp. 305–308. [Online]. Available: <https://ojs.emt.ro/oget/article/view/156>.

Zs. Kemény, R. Beregi, J. Nacsa, C. Kardos, and **D. Horváth**, "Human–Robot Collaboration in the MTA SZTAKI Learning Factory Facility at Győr," in *the 8th CIRP Sponsored Conference on Learning Factories (CLF)*, ser. Procedia Manufacturing, vol. 23, Jan. 2018, pp. 105–110. doi: [10.1016/j.promfg.2018.04.001](https://doi.org/10.1016/j.promfg.2018.04.001).

Zs. Kemény, R. Beregi, J. Nacsa, C. Kardos, and **D. Horváth**, "Example of a Problem-to-Course Life Cycle in Layout and Process Planning at the MTA SZTAKI Learning Factories," in *the 9th Conference on Learning Factories (CLF)*, ser. Procedia Manufacturing, vol. 31, Jan. 2019, pp. 206–212. doi: [10.1016/j.promfg.2019.03.033](https://doi.org/10.1016/j.promfg.2019.03.033).

SCIENTIFIC STUDENTS' CONFERENCE

D. Horváth, "Development and implementation of an intelligent robotic manipulator-application with adaptive environment sensing in an experimental cyber-physical production system," in *the BME Scientific Student Conference*, Nov. 2017

D. Horváth, G. Losonczi, and T. Magyar: "Development and Implementation of Navigation and Control Algorithm for AGV Robots in a Smart Factory," in *the XXXIII. National Scientific Student Conference*, Apr. 2017.