Mikołaj Stryja

PhD Candidate in AI for Radiotherapy

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Research Summary

PhD researcher in the BIOLab (TU Delft) developing fast deep learning dose engines and AI-driven optimisation methods for adaptive radiotherapy. My work focuses on angle-aware proton dose calculation, robust treatment planning, and clinically deployable ML systems that reduce computational bottlenecks while preserving dosimetric accuracy.

Experience

Sep 2022 – Present

PhD Candidate — AI for Adaptive Radiotherapy

Delft, NL

TU Delft, Medical Physics & Technology (BIOLab)

- Developed ADoTA, an angle-dependent transformer dose engine for fast pencil-beam scanning proton therapy dose calculation.
- Investigating ML-based robust planning and adaptive radiotherapy workflows that reduce dose to Organs at Risk while preserving tumour coverage.

May 2021 – Sep 2022

Machine Learning Specialist

Remote / Poland

Future Processing Healthcare (GrayLight Imaging)

- Designed and trained deep learning models for automated 3D segmentation of CT/MRI volumes (PyTorch, TensorFlow, ITK, PyVista).

Aug 2019 – Present

Co-founder & ML Lead

Gliwice, PL

ArtNovation Ltd

- Co-founded healthcare AI startup focused on pathomorphology; led ML research and histopathological tumour-detection product development.

Education

2022 – Present

PhD, Radiation Science & Technology

Delft, NL

Delft University of Technology (TU Delft)

Apr 2022 – Jun 2022

Berlin Cohort Member

Berlin, DE

Entrepreneur First — international talent investor

Selected from 1,100 candidates to a 50-person cohort; EF supports exceptional talent in building technology companies and pioneered talent investing.

2019 – 2021

M.Sc., Mechatronics Engineering — GPA 4.5/5.0

Krakow, PL

AGH University of Science and Technology

Thesis: Non-invasive soft tissues pathology evaluation based on advanced processing methods.

2016 – 2020

B.Sc., Automatics and Robotics — GPA 4.5/5.0

Krakow, PL

AGH University of Science and Technology

Thesis: Intracranial Hemorrhage Detection using advanced Machine Learning algorithms.

Technical Skills

Python | C++ | PyTorch | NumPy | CuPy | DICOM | ONNX | MCsquare | Monte Carlo Sim.

Selected Publications

Stryja, M., Lathouwers, D., & Perkó, Z. *Angle-dependent dose transformer algorithm for fast proton therapy dose calculations.* arXiv:2602.04375 [physics.med-ph], 2026. arxiv.org/abs/2602.04375

Malawski, F., Gośliński, J., **Stryja, M.**, et al. *Deep Learning Meets Computational Fluid Dynamics to Assess CAD in CCTA.* LNCS, Applications of Medical AI, pp. 8–17, 2022. doi.org/10.1007/978-3-031-17721-7_2

Languages

Polish (native)

English (C1/C2)

German (basic)

Selected Achievements

- AGH Rector's Grant — AI for CML diagnosis (2020–21)
- AGH Rector's Grant — intelligent prosthetics (2020–21)
- World Champion, Free Flight Models F1E (2015)
- NASA CanSat — 20th place worldwide (2017)