Roman Dolgopolyi

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Research Statement

My research focuses on key challenges in artificial intelligence (AI) safety, particularly AI alignment, trustworthiness, and security, to minimize the risks associated with the inevitable deployment of AI systems in critical domains including healthcare, cybersecurity, and robotics.

Education

The American College of Greece (ACG), Athens, Greece — **Cumulative GPA: 3.75/4.00**
BSc (Hons) in Cybersecurity & Networking (expected May 2026) — **Major GPA: 3.97/4.00**

Coursework: *Data Mining & Big Data Analysis; AI & Machine Learning; Applied Statistics; Mathematics for Computing; Secure Software Development; Cryptography; Privacy, Policy, Law & Technology; Criminology.*

Thesis title: *COMPASS - Compliance-oriented Model Performance Assessment for Safety Standards.*

Publications

- R. Dolgopolyi and A. Tsevas, "Bridging Perception, Language, and Action: A Survey and Bibliometric Analysis of VLM & VLA Systems," *EurIPS'25 Workshop on the Science of Benchmarking and Evaluating AI*, submitted for presentation, 2025.
- R. Dolgopolyi, "Transparency of Autonomous Driving Algorithms," *AI and Ethics (Springer)*, submitted, 2025.
- R. Dolgopolyi, I. Amaslidou, and A. Margaritou, "Interpretable Machine Learning for Life Expectancy Prediction," *arXiv*, preprint, 2025.
- R. Dolgopolyi and A. Chatzipanagiotou, "EEG Emotion Recognition Through Deep Learning," in *Proceedings of the 22nd European, Mediterranean, and Middle Eastern Conference on Information Systems (Springer)*, 2025.

Research Experience

Research Assistant — May 2025 – Present
Laboratory of Artificial Intelligence, ACG · Advisors: Prof. I.T. Christou, Prof. N. Bakas

- Research in explainable AI for healthcare and in safety of visual-language-action (VLA) models:
  - Explainability of convolutional neural networks (CNNs) for early diagnosis of acute lymphoblastic leukemia
  - Development of a safety-assessment benchmark for VLA

Research Assistant — May 2024 – Aug 2024
Laboratory of Smart Wireless Future Technologies, ACG · Advisors: Prof. C.B. Papadias

- Research in wireless communication:
  - Phase shift keying (PSK) classification with recurrent neural networks (RNNs)
  - Analysis of AI-enabled integrated sensing and communication (ISAC) systems for object recognition tasks

Honors

Millennium Fellowship Recipient (2025): United Nations leadership program.
Western Union Global Scholar Nominee (2025): university-selected competitive scholarship.
Dean's List (2023 – 2025): given for an outstanding academic performance.

Teaching Experience

Volunteer Tutor — September 2022 – Present
Independent

- Inspired future STEM practitioners by providing programming and mathematics lessons from a creative perspective

Selected Projects

Interpretable Machine Learning for Life Expectancy Prediction: developed ML models (linear regression, decision trees, random forests) to predict life expectancy using open WHO & UN datasets and analyzed feature importance for interpretability.

[github.com/r0m4k/MachineLearningforLifeExpectancy]

EEG Emotion Recognition Through Deep Learning: built a CNN-Transformer model for emotion recognition (positive, negative, neutral) based on 5-electrode EEG signals. The project demonstrated novel application of deep learning (DL) to EEG devices.

[github.com/r0m4k/EmotionRecognitionDeepLearning]

Certifications

Machine Learning & Deep Learning Specializations (Stanford) · Mathematics for Machine Learning (Stanford)
Computer Science for AI (Harvard) · Machine Learning Summer School (Oxford)

Technical Skills

Programming: MATLAB, C/C++, Java, Python
Other: SQL, Git, Docker, Azure, AWS, Linux, Bash

Machine Learning: TensorFlow, PyTorch, NumPy, Pandas, Scikit-Learn, LlamaIndex, LangGraph