Victor Pădurean

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Basics

Ph.D. Student at Max Planck Institute for Software Systems

Interests: Artificial Intelligence, Generative Models, Large Language Models, Multimodal Models, Deep Learning, Benchmarking Generative Models, AI-driven Education, Educational Content Generation

Education

Ph.D.   **Max Planck Institute for Software Systems/Saarland University, Germany**   Sep 2021 – ongoing
Computer Science
- **Supervisor:** Prof. Adish Singla
- **CS@max planck** program

B.Sc.   **Technical University of Cluj-Napoca, Romania**   Oct 2017 – Jun 2021
Computer Science
- **GPA:** 10.0/10.0
- **Thesis:** Thermal Flexibility Estimation for Server-Heaters
- **Advisor:** Dr. Marcel Antal

Selected Publications

[1] **Victor-Alexandru Pădurean**, Paul Denny, Alkis Gotovos, and Adish Singla. Prompt Programming: A Platform for Dialogue-based Computational Problem Solving with Generative AI Models. In *Proceedings of the ACM Conference on Innovation and Technology in Computer Science Education*, 2025.

[2] **Victor-Alexandru Pădurean**, Paul Denny, and Adish Singla. BugSpotter: Automated Generation of Code Debugging Exercises. In *Proceedings of the Technical Symposium on Computer Science Education (SIGCSE TS)*, 2025.

[3] Ruchit Rawal, **Victor-Alexandru Pădurean**, Sven Apel, Adish Singla, and Mariya Toneva. Hints Help Finding and Fixing Bugs Differently in Python and Text-based Program Representations. In *Proceedings of the International Conference on Software Engineering (ICSE)*, 2025.

[4] Manh Hung Nguyen, **Victor-Alexandru Pădurean**, Alkis Gotovos, Sebastian Tschiatschek, and Adish Singla. Synthesizing High-Quality Programming Tasks with LLM-Based Expert and Student Agents. In *Proceedings of the International Conference on Artificial Intelligence in Education (AIED)*, 2025.

[5] **Victor-Alexandru Pădurean**, Tung Phung, Nachiket Kotalwar, Michael Liut, Juho Leinonen, Paul Denny, and Adish Singla. Humanizing Automated Programming Feedback: Fine-Tuning Generative Models with Student-Written Feedback. In *Proceedings of the International Conference on Educational Data Mining*, 2025.

[6] **Victor-Alexandru Pădurean** and Adish Singla. Benchmarking Generative Models on Computational Thinking Tests in Elementary Visual Programming. In *NeurIPS Datasets and Benchmarks*, 2024.

[7] **Victor-Alexandru Pădurean**, Georgios Tzannetos, and Adish Singla. Neural Task Synthesis for Visual Programming. *Transactions on Machine Learning Research (TMLR)*, 2024.

Work Experience

Linnify, Data Scientist
Romania
Oct 2020 – Nov 2022
- Worked on an early project.
- Responsibilities include researching and developing approaches for correlating workplace data with employee stress levels.

Linnify, Backend Developer Intern
Romania
Jul 2020 – Aug 2020
- Responsibilities include developing and deploying an internal tool for project managing and socializing under the scrum framework.
- Employed technologies used include Python, Django, PostgreSQL Bitbucket Pipelines, Docker, Google Cloud Services.

Montran Corporation, Full Stack Developer Intern
Romania
Jul 2019 – Aug 2019
- Responsibilities include developing a banking web application.
- Employed technologies include Java, Java Spring, MySQL, MongoDB, Maven.

Skills

Programming: Python, JavaScript, Java, C, SQL

Machine Learning Frameworks: PyTorch, Tensorflow/Keras, HuggingFace Transformers

Data Science Frameworks: Pandas, NumPy

Development Frameworks: Django, React, Spring

Miscellaneous: Git, Docker, Linux, LaTeX

Soft Skills: Highly Self-motivated, Collaborative Team Player, Excellent Communicator, Efficient Time Manager, Creative Problem-solver, Skilled Presenter, Strong Academic Writer

Honors/Awards

Valedictorian, Computer Science – English Study Program, Technical University of Cluj-Napoca, 2021

Teaching

Generative AI, Saarland University
Winter Semester 2024/25
Teaching Assistant

Advanced Course on Reinforcement Learning, Saarland University
Winter Semester 2022/23
Teaching Assistant

Data Networks, Saarland University
Summer Semester 2022
Teaching Assistant

Service & Mentorship

Reviewer: NeurIPS 2025, TMLR 2025, ITiCSE 2025, ISSEP 2025
Mentor: Mentorship for Relief Program, MPI-SWS - mentoring Othman Shbeir (2024 - ongoing)

Languages

Romanian: Native

English: Proficient (C2)

French: Intermediate (B1)

German: Beginner (A1/A2)