

Júlia Pap

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Home page: <https://papjuli.github.io/>



TLDR: Machine learning and computer vision engineer with a Ph.D. in applied mathematics and 10 years of experience in research and industry. Recently completed a Diploma of Advanced Studies in Data Science at ETH Zürich, specializing in image analysis and computer vision. Experienced in 3D reconstruction, deep learning, applied data science, and discrete mathematics.

Software engineering experience

- Computer Vision engineer at [Orbio](#) 2023 Nov. – 2024 Jan.
 - helped jumpstart computer vision project for methane detection in satellite images
- Machine learning engineer at [Orderfox](#), Zürich 2022 June – 2022 August
 - trained and deployed an autoencoder for 3d models of machined parts (using TensorFlow and AWS)
- Machine learning engineer at [Archilogic](#), Zürich 2017 Dec. – 2021 June
 - Python development for automation tasks (furnishing rooms, zoning office spaces) using computational geometry and optimization
 - machine learning training and integration for parsing of floor plan images
 - devops on AWS
- Software engineer at [Creo Group](#), Budapest 2017 May – July
 - NLP backend for news topic classification (Java)
- Research fellow at [Institute for Computer Science and Control](#) (SZTAKI), Data Mining and Search Group, Budapest 2014 – 2016
 - new recommender system methods that leverage location information, for recommending topics for Twitter users based on geo-tagged tweets (C++)
 - matrix-factorization based recommender system in Python

Research experience

- Research assistant at [ELTE Institute of Mathematics](#), Budapest 2009 – 2013
 - I worked in the areas of combinatorial optimization, polyhedral combinatorics, graph theory, algorithms and complexity.

- ADONET–Marie-Curie research fellow in G-SCOP, Grenoble, France 2007
- Member of the Egervary Research Group on Combinatorial Optimization ([EGRES](#)). 2003–2013

Education

- Diploma of Advanced Studies in Data Science at ETH Zurich, specializing in Image Analysis and Computer Vision 2023 – 2025
- [Computer Vision Nanodegree](#) on Udacity 2022
- [Deep Learning Specialization](#) on Coursera 2021
- PhD in Applied Mathematics
Etvos University, Budapest (Summa cum laude). Advisor: Andras Frank.
Thesis: *Integrality, complexity and colourings in polyhedral combinatorics*. 2013
- MSc in Mathematics
Etvos University, Budapest. Advisor: Andras Frank.
Thesis: *Structure and polyhedra of stable matchings* (in Hungarian). 1999 – 2004

Programming skills

- Python, Java, JavaScript, C++.
- Some tools I used: TensorFlow, PyTorch, OpenCV, Open3D, NumPy, AWS, etc.

Teaching experience

- University course taught as instructor: game theory.
- University courses taught as teaching assistant: combinatorial algorithms, operations research, and discrete mathematics.

Publications

- 11 peer-reviewed papers and 5 technical reports on combinatorics and recommendation systems, see <https://papjuli.github.io/publications>.
- K. Berczi et. al, *Operations research exercises*, online exercise book (in Hungarian)

Other projects and services

- I participated in the [Hack4Good](#) program of the Analytics Club of ETH Zurich.
- I participated in the [NASA Datanauts](#) program.
- I advised Vanda Horvath, BSc. Title of her thesis: *Schnyder-labelings and applications*.

Languages

- Hungarian (native), English (advanced), German (basic).

June 2025