

Valerijan Matvejev

Computer Vision Engineer - 3D/2D Pipelines - PhD Candidate (AI)

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TECHNICAL SKILLS

Agentic AI: Claude Code, Codex, Augment

ML / CV: PyTorch, TensorFlow, OpenCV, NumPy, monocular depth, 3D human mesh recovery, pose estimation

3D / Geometry: 3D data optimization, camera calibration, LiDAR/point clouds, signal filtering, Blender visualization

Languages: Python, C/C++, Java, JavaScript

CERTIFICATES

Anthropic Claude training and certification (in progress)

English C2 - Cambridge Certificate of Proficiency in English (CPE)

French B2 - DELF B2(Diplôme d'études en langue française)

PROFESSIONAL EXPERIENCE

AI / Computer Vision Engineer (Contractor)

NurivaTech AI (SportFX)

01/2026 - Present — *Remote*

2D-3D pipelines, Computer Vision, Research

- Worked on a monocular video to **3D human motion** reconstruction pipeline, recovering metric 3D body motion from a single camera
- Designed a physics-aware grounding optimization that **eliminated** foot-ground penetration and reduced foot skating by **83%** and acceleration jitter by **99%** in production
- **Reduced** center-of-mass 3D trajectory error against **Qualisys** ground truth from **17.6 cm** to **2.1 cm** through optimization correction, validated against ARKit IMU
- Researched, evaluated and integrated different SOTA monocular **depth estimation models**. Used and fused multi-modal sensor data to correct errors

Junior Computer Vision Researcher

BioSense – European Institute of Excellence

11/2024 - 07/2025 — *Novi Sad*

Research, Computer Vision

- Developed image segmentation models reaching **93%** accuracy on European Sentinel-2 satellite imagery

Research Internship in Computer Vision

Innovation Center of the School of Electrical Engineering

03/2024 - 08/2024 — *Belgrade*

Research, Experiment

- Conducted an experimental study with real participants. Data used to train a custom machine learning model which reached **92%** image memorability prediction accuracy

Full-Stack Developer

TESO d.o.o.

10/2022 - 04/2023 — *Belgrade*

Achievements/ Tasks

- Full-stack development of a commercial security application, covering frontend and backend, from software design to the implementation of user interfaces and server-side services

PERSONAL PROJECTS

AI Security: Dataset ownership verification and model robustness (gradient matching, data taggants) (Python, Pytorch)

Segmentation and classification of Sentinel-2 satellite images (PyTorch)

Prediction of image memorability from eye-tracking data using machine learning models (TensorFlow)

Recognition of handwritten mathematical expressions (PyTorch)

Panorama reconstruction using 3D computer graphics projections (C++)

Augmented reality project which rendered custom charts onto a flat surface (Unity)

Classification of 3D medical images using deep neural networks (Python, TensorFlow, Keras)

INTERESTS

public speech

cycling

active lifestyle

hiking

religion

culture

piano

music

travel

philosophy

board games

EDUCATION

PhD in Computer Science and Artificial Intelligence
School of Electrical Engineering, University of Belgrade

11/2024 - Present *Belgrade*

Research

- Research in computer vision: 3D computer vision pipelines, AI cybersecurity, dataset ownership verification
- Research collaboration with École Polytechnique, Paris

Master's Degree, Computer vision
Polytech Nantes, France

09/2023 - 09/2024 *Nantes*

GPA: Exams: 14.35/20.00; Research: 17.00/20.00

- Advanced image and video processing
- Perceptual computing
- 3D computer graphics
- Machine learning for computer vision
- Human–computer interaction
- Multimedia communication

Bachelor's Degree, Software Engineering
School of Electrical Engineering, University of Belgrade

07/2018 - 06/2023 *Belgrade*

GPA: 9.49/10.00

- Engineering studies

PUBLICATIONS

Conference paper

A Robust Postprocessing Grounding Framework for Monocular 3D Motion Recovery: Benchmark on MLB Baseball Footage

V. Matvejev, D. Drašković

V. Matvejev, D. Drašković

May-2026

5th Serbian International Conference on Applied Artificial Intelligence (SICAAI), Kragujevac, Serbia

Conference Paper

Prediction of Image Memorability Using Machine Learning Models

V. Matvejev, D. Drašković

V. Matvejev, D. Drašković

Feb-2025

Proc. 31st National ICT Conference YU INFO 2025, Kopaonik, Serbia, pp. 1–6. ISBN: 978-86-85525-33-9

SCHOLARSHIPS AND DISTINCTIONS

- French Government Scholarship for PhD cotutelle studies (2025)

- University of Nantes Master's Degree Scholarship (2023–2024)

- "Dositeja" Scholarship for Bachelor's studies (2022)

- More than 10 conferences given, hosted, or attended on artificial intelligence (Radio Television of Serbia, BBC Serbia, TV Hram, Belgrade Youth Center, Student Cultural Center – visible on my Linktree)