Adrian **Szatmari**
Machine Learning Engineer & Mathematician

About me

Dynamic mathematician with over 6 years in R&D and ML. Seeking a vibrant team. Agile and growth-oriented, I thrive in diverse environments, from startups to large corporations, and have a proven track record in both North America and Europe.

Personal

- Adrian Szatmari
- Canadian, Hungarian
- 34 years old
- Berlin, Germany
- Hybrid or remote

Specialization

- Machine Learning
- Computer Vision
- LLMs
- Robotics
- Motor Drivers
- Parallel Computing

Languages

- English, native
- French, native
- Hungarian, native
- German, A2 learning

Contact

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https://github.com/szat

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WORK EXPERIENCE

Jan 2023 - Jan 2024 — **Freelancing Research (Python, Jax, Cuda, Pytorch, Ffmpeg)**
FREELANCE · **Berlin**
Video highlight extractions using BERT.
Ffmpeg editing commands using LLMs.
NERF, Plenoxels, Gaussian Splats in Jax and Pytorch.
Superpixels (SLIC) in Jax and Cuda, 20 fps.
Octree implementation research in Jax and Cuda.
Triniliear interpolation, 1.5x faster than SOTA.

May 2021 - Jan 2022 — **Deep Learning (Python, Caffe, TF2, MongoDB)**
ASAPHUS VISION · **Berlin**
NN models for eye-gaze estimation.
Data cleaning for eye-gaze estimation.
Migrated the main database to MongoDB (speed-up 30x).
Wrote Jenkins database upkeep routines.
Added features to labeling GUI in QT.

Nov 2020 – Nov 2021 — **R&D Engineer (C++, Python, TF2, Blender)**
THINKWELL GROUP · **Montreal**
Camera and projector simulation in Blender.
Camera and projector positioning, with sub-pixel accuracy.
3D reconstruction from structured light.
Object tracking in real time 60 FPS.
New algorithm for image stitching.

Aug 2018 – Aug 2020 — **Innovation Engineer (C++, Cuda, ROS2, Gstreamer)**
FUGRO · **Den Haag**
Driver for FLIR cameras, 4K, 30 fps (Gstreamer).
Gstreamer 180ms latency glass to glass pipeline (Gstreamer).
CNN Gstreamer plugin (Gstreamer).
Video stitching, 4K, 60 fps (Gstreamer).
Driver for Sidus stepper motor via serial (ROS2).
Driver for industrial thrusters (ROS2).
Control system for thruster deadzone avoidance (ROS2).

EDUCATION

2013-2016 — **Ms Applied Mathematics**
UNIVERSITY OF LEIDEN
LEIDEN, NETHERLANDS

2009-2013 — **Bc Honours Mathematics**
MCGILL UNIVERSITY
MONTREAL, CANADA

2007-2009 — **Ibo Applied Sciences**
COLLEGE JEAN-DE-BREBEUF
MONTREAL, CANADA

TECH STACK

Python	●	●	●	●
C / C++14 / Cuda	●	●	●	○
Numpy / Jax	●	●	●	●
TF2 / PyTorch	●	●	●	○
OpenCV / Open3D	●	●	●	●
Gstreamer / Ffmpeg	●	●	●	●
ROS / ROS2	●	●	●	○
Git / Docker	●	●	●	○
Terminal / Bash	●	●	○	○

PUBLICATIONS

2016 — **Robotic Path Planning: The n-Arm Robot Problem.**
MASTER'S THESIS · **Leiden**
Parallelizing robotic motion planning by reframing it as a concurrency problem to address computational challenges. Link: https://github.com/szat/MasterThesis

2012 — **Symmetry analysis of a system of modified shallow-water equations.**
ELSEVIER · **Montreal**
Lie symmetries in shallow-water equations for generating new solutions through group actions. Link: http://www.sciencedirect.com/science/article/pii/S1007570413002992