

ROMAN NAUMENKO

Research Engineer

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ABOUT MYSELF

I'm a computer vision engineer with extensive experience in GPU-accelerated computer graphics. I have strong expertise in systems engineering, integration, and machine learning. My current work focuses on optimizing AI algorithms for real-time applications on embedded hardware.

EDUCATION

Undergraduate of Software Engineering, National Technical University of Ukraine, Kyiv 2020-2022

Bachelor of Computer Science, Ukrainian Catholic University, Lviv Expected 2025

SKILLS

Technical Skills	C/C++, Python, PyTorch, NumPy, Pandas, Linux, DirectX11/Vulkan/OpenGL, GLSL/HLSL
Soft skills	Attention to detail, teamwork, leadership, problem-solving
Languages	Ukrainian (native), English (upper-intermediate)
Other	Computer vision, machine learning, multithreading, operating systems, modern rendering techniques, compute shaders, BVHs, OOP, OOD

EXPERIENCE

Research Engineer May 2024 - Now
FoxFour & UCU Machine Learning Laboratory *Lviv, Ukraine*

- Achieved a 10x performance speedup in convolutional neural network inference on embedded platform.
- Developed an efficient and accurate deep learning-based keypoint extraction frontend for a visual-inertial odometry application.

Render Programmer April 2022 - January 2023
Fractured Byte *(remote) Kyiv, Ukraine*

- Gained experience in software-hardware integration and optimization for specific hardware (Nintendo Switch).
- Developed tools for technical artists, fixed render bugs and improved performance of the rendering system.

Trainee Software Developer Nov 2021 - Dec 2021
AMC Bridge *(remote) Dnipro, Ukraine*

- Worked in research department and build a program for handling 3D-objects transformations.

PROJECTS

SLAM for Drone Swarms: Contributed to a platform research [project](#) by adapting a CNN-based [ALike](#) solution for keypoint detection and feature extraction. Achieved real-time 20Hz inference on UAV-specialized onboard computers powered by Rockchip modules and successfully integrated it as a visual frontend in the SLAM pipeline.

Small Mamba Language Model. Custom [implementation](#) of Mamba state space model pretrained for NLP tasks. Took part in research of a completely different approach for building fundamental models, proposed by Albert Gu and Tri Dao from Stanford University. Implemented a simplified version of their SOTA model and trained for generating human like text.

Audio inpainting. Implemented inpainting functionality for the hackathon [task](#). Researched and tested different variations of SAM and two generative models: a diffusion based and LaMa.