GOLTIAKOV NIKITA

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EDUCATION

Universite Paris-Saclay, Paris *November 2022 - pres.*
CentraleSupelec—IFP Energies nouvelles
PhD, Digital signal and image processing (CV/ML)

Ural Federal University, Yekaterinburg *September 2012 - August 2019*
Institute of Natural Sciences and Mathematics
Department of Mathematics, Mechanics and Computer Science
MSc, Diploma in Applied Mathematics (Mechanics and Mathematical Modelling) (4.77/5)

MASTER'S THESIS

Thesis	The Study of non-linear dynamics of the Spine under impact loading
Keywords	Dynamical systems, Non-linear ODE, Poincare normalisation, Computer vision
Thesis advisers	Prof. Dolgii Y.F., Associate Prof. Schneider A.Y.

WORK EXPERIENCE

IFP Energie Nouvelles, Lyon
Nov. 2022 - Pres. *PhD Student*

· PhD thesis: New face-dependent packing microstructure model
· Research and development of new random models for microstructure formation using image processing techniques
· Optimisations of existing algorithms

Institute of Fundamental Technological Research PAS, Warsaw
Oct. 2020 - Nov. 2022 *R&D engineer*

· Developed and optimized deep learning models for processing and analyzing SMILES data in biological research, enhancing predictive accuracy for molecular properties and drug discovery.
· Developed and implemented advanced algorithms for cell nuclei segmentation in DAPI-stained microscopic images (proliferation experiments) using classical CV methods and DL
· Engineered robust cell tracking systems for time-series microscopic images, using Information theory and Graph Neural networks
· Data engineering of complex biological data, including 4i experiments, proliferation experiments, and the construction of cell lineage trees

UrFU Department of Theoretical and Mathematical Physics, Yekaterinburg
Sep. 2019 - Sep. 2020 *Assistant Researcher in Mathematical physics*

· Research in Mathematical Physics (Fluid dynamics, Ice formation, Dissolution, PDE)

Bank Innovation Systems LLC, Yekaterinburg
Sep. 2019 - Sep. 2020 *C++ Developer(Computer vision)*

· C/C++ development on Windows environment
· Development and optimization of algorithms for image processing and pattern recognition
· Optimization of C/C++ code to speed up computations using GPU (CUDA)
· Development of drivers for video cameras in C

SKILLS

Programming languages	C, C++, Python, Golang
Technologies	OpenCV, CUDA, Eigen, TensorFlow, PyTorch
Applications	DeepStream, Docker, LaTeX
Project Management	Agile
Languages	English (Advanced), French (A1), Deutsch(A1), Russian (Native)

OTHER ACTIVITIES(PUBLICATIONS AND CONFERENCES)

On the theory of directional crystallization with a two-phase region with vigorous convection, European Physical Journal: Special Topics, 2020

"Technical Systems Control and Computer Modeling of Mathematical Structure with IT", Nonlinear dynamics of the human spine under longitudinal impulse influences, Conference of Ural State University of Railway Transport, Yekaterinburg

Towards a theory of directional solidification in the presence of a two-phase zone with intense convection in a liquid layer, International Conference on Trends in Material Science and Inventive Materials, ICTMIM 2020