Fedor “Theo” Chervinskii

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Experience

01.02.2024 - current
Circu Li-ion, Berlin, Germany - *Lead Perception & AI*

- Leading the development of the perception stack for automated disassembly lines

01.07.2023 - 24.12.2023
BoWatt, Berlin, Germany - *Co-founder, CTO*

- Implemented Proof-of-Concept for AI Copilot for Requirements Management in Industrial Automation domain. I prototyped various value-adding features using LLMs APIs, Retrieval Augmented Generation pipeline, complex dynamic prompts, and language chains.

12.04.2023 - 18.06.2023
Antler, Berlin, Germany - *Founder in Residence*

- Validated multiple ideas in the manufacturing / industrial robotics areas.

01.10.2019 - 31.01.2023
Arrival, Berlin, Germany - *Head of Research, Robotics*

- Led a team of up to 10 people that successfully implemented multiple R&D projects:
    - Reinforcement Learning for Assembly using Robotic Arm.
    - Using graph-based optimization algorithms to optimally schedule tasks on resources in the factory, including logistic tasks performed by mobile robots.
    - Visual SLAM for Industrial Mobile Robots.
    - Using a camera placed on an Industrial Robotic Arm, implementing a multi-view object 6D pose estimation.
    - Automated processing of CAD models to compute optimal assembly sequence, robotic task sequence, and trajectories to perform end-to-end assembly using tools.
- Co-authored two papers at a leading international conference in Robotics - ICRA.
- As a research leader, established research culture in the department, including Paper Reading Club, Show&Tells for effective knowledge exchange, Technology Readiness Levels tracking framework for successful transition of research into development.
- Coordinated collaboration between multiple teams that led to the implementation of SotA algorithms and methods in production.

01.05.2019 - 01.08.2019
Samsung AI Center, Moscow, Russia - *Lead Engineer*

- I led a project to implement a know-how Deep Learning-based Visual Odometry pipeline on a physical robot using ROS and PyTorch, demonstrating the robustness of the model in practice.
- I supervised two student interns, formulating the projects for them and guiding their daily tasks.

01.02.2018 - 01.04.2019

Lvl5.ai, Moscow, Russia / San Francisco, US (remote) - *Senior Data Scientist, Team Lead*

- As a second hire, I played a crucial role in developing the core technology for the company - a computer vision algorithm that combined multiple dashcam videos with GPS into a 3D representation of the road - HD map. The algorithm included a few ML models - for object detection and semantic segmentation, and a unique Structure-from-Motion algorithm, fusing the results in 3D space.
- My role involved defining the company's know-how technology and PoC implementation. Later I was responsible for hiring a team of 3 people to build the MVP together.
- The company has been successfully acquired by an American delivery giant DoorDash.

01.08.2017 - 01.02.2018

Connectome.ai, Moscow, Russia - *Chief Data Scientist, CTO*

- I joined the company at its inception, and during my time there led the development of the first computer vision products - sanitary inspection and quality inspection for meat production facilities. The tech stack included object detection and classification ML models, an object tracking algorithm, and integration with physical devices, such as physical cameras and security gates. Both products were successfully demoed to the customer and later implemented in production.
- My role involved individual contributions such as training models and writing code, as well as team management and hiring.

01.06.2015 - 01.08.2017

Yandex, Moscow, Russia - *Research Engineer*

- I worked in a small R&D team working on various computer vision projects, that later became the core team of the Self-Driving Car project.
- I have been responsible for building proofs-of-concept and integration of prototypes, to show the feasibility of Computer Vision and ML technologies for use in Yandex products.
- When the Self-Driving Project started, I contributed to the architecture design and the choice of algorithmic approaches. I implemented a significant portion of the first ROS-based prototype that used cameras, radar, GPS, and LIDAR to drive. I also actively participated in field testing, experimentation, data collection, and labeling.
- During my work there I presented one of the team's projects - real-time free parking space detection - at an international conference - Nvidia GTC Europe in Amsterdam in Sept 2016.

01.07.2013 - 10.09.2013

CFEL DESY, Hamburg, Germany - *Research Intern*

- I implemented Python pipelines to process data from X-Ray Free Electron Lasers.
- Suggested a new metric and a way of visualization that was later included in a few highly-cited publications.

Education

01.07.2014 - 01.07.2016

Skolkovo Institute of Science and Technology, Moscow, Russia - *Master of Science*

Thesis: "Semantic Segmentation of Road Scenes"
Advisor: prof. Victor Lempitsky

01.09.2015 - 25.12.2015

Massachusetts Institute of Technology (MIT), Cambridge, US - *Exchange Semester*

Track: Computer Science and Engineering

01.09.2010 - 01.07.2014

Moscow Institute of Physics and Technology (MIPT), Moscow, Russia - *Bachelor of Science*

Specialization: Applied Math and Physics, Nanotechnology
Thesis: "Study of kinetics of GaN growth in Ga-reach mode of NH_3-MBE"

Skills

Linux, bash, git (git-flow, CI/CD), Docker, k8s, Python, PyTorch, Tensorflow, ROS, Optimization Methods, Operations Research, Statistics, Deep Learning, Reinforcement Learning, Computer Vision, OpenCV, SLAM, Visual Odometry, Structure from Motion, LangChain, LLMs, C/C++, CUDA, OpenSCAD, Flask, FastAPI, MongoDB, React, JavaScript, TypeScript, Azure, AWS

Team Leadership, Project Management, Kanban/Scrum, Presentation, User Research

Publications

Sim2Real for Peg-Hole Insertion with Eye-in-Hand Camera
Damian Bogunowicz, Aleksandr Rybnikov, Komal Vendidandi, Fedor Chervinskii
ICRA 2020 ViTac workshop

Auto-Assembly: a framework for automated robotic assembly directly from CAD
Fedor Chervinskii, Sergei Zobov, Aleksandr Rybnikov, Danil Petrov, Komal Vendidandi
2023 IEEE International Conference on Robotics and Automation (ICRA)

Interests

Robotics of all kinds, Manufacturing, Connecting worlds of atoms and bits, New Energy, SpaceTech
Endurance sports (Marathon PR 3:13), bicycle touring