

# Curriculum Vitae

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<b>Contact Information</b>	Name: Ivan Ovinnikov Birthday: 06.02.1990 Nationality: Swiss	mobile: +41 76 470 89 34 e-mail: ivan.ovinnikov@gmail.com
<b>Professional Experience</b>	<b>ETH Zurich D-INFK, ISE Group, Zurich, Switzerland</b> <i>Doctoral Candidate</i>	<b>February 2019 – June 2024</b> <ul style="list-style-type: none"><li>• Designed a novel algorithmic pipeline for surgical assistance and evaluation based on inverse reinforcement learning techniques and implemented it in a surgical simulation product.</li><li>• Authored multiple manuscripts for peer-reviewed venues and presented at international conferences.</li></ul>
	<i>Teaching Assistant</i>	<b>February 2019 – June 2024</b> <ul style="list-style-type: none"><li>• Assisted in developing course materials for graduate-level courses in Advanced Machine Learning, Statistical Learning Theory and Algorithmic Game Theory.</li><li>• Conducted tutorials, graded assignments, and provided mentorship to students.</li></ul>
	<b>Swiss Foundation for People with Rare Diseases, Schlieren, Switzerland</b> <i>Research Assistant</i>	<b>October 2021 – November 2021</b> <ul style="list-style-type: none"><li>• Developed data processing pipelines for genetic sequencing data in various formats (VCF, BAM, FASTA, single-cell RNA data) in the context of a civil service project.</li></ul>
	<b>Disney Research Zurich, Zurich, Switzerland</b> <i>Research Assistant</i>	<b>November 2016 – December 2018</b> <ul style="list-style-type: none"><li>• Worked on extending sequence-to-sequence models for natural language processing using structured variational inference approaches.</li><li>• Authored a manuscript on applying hyperbolic geometry to Wasserstein autoencoder models for hierarchical structure discovery.</li></ul>
	<b>EPFL Lausanne DISAL Group, Lausanne, Switzerland</b> <i>Research Assistant</i>	<b>March 2013 – September 2013</b> <ul style="list-style-type: none"><li>• Developed an algorithm for precision autonomous landing of quadrotor micro aerial vehicles using onboard monocular vision deployed for environmental monitoring.</li></ul>
	<b>Quartzteq GmbH, Windisch, Switzerland</b> <i>Development Engineer</i>	<b>November 2010 – December 2015</b> <ul style="list-style-type: none"><li>• Worked on hardware and software design of a wireless sensor network system for health monitoring of large electrical machines.</li></ul>
<b>Education</b>	<b>ETH Zurich, D-INFK, Zurich, Switzerland</b> <i>Doctor of Philosophy</i>	<b>February 2019 – June 2024</b> <ul style="list-style-type: none"><li>• Dissertation Title: "On learning from demonstrations in digital twins"</li></ul>
	<b>ETH Zurich, D-ITET, Zurich, Switzerland</b> <i>Master of Science</i>	<b>September 2013 – September 2015</b>
	<b>Lund University, Faculty of Engineering LTH, Lund, Sweden</b> <i>Exchange Studies</i>	<b>September 2012 – December 2012</b>
	<b>ETH Zurich, D-ITET, Zurich, Switzerland</b> <i>Bachelor of Science</i>	<b>September 2009 – June 2012</b>

**Professional Skills** *Research:* Proficiency in model-free reinforcement and imitation learning methods, unsupervised learning and optimization, extensive knowledge in NLP including Large Language Models (LLM), broad knowledge of modern machine learning algorithms  
*Programming:* Python, C, C++, C#, Java, Matlab, LabVIEW, Javascript, Lua, VHDL  
*Frameworks:* Pytorch, Tensorflow, Jax, Scikit-Learn, Torch7, Theano, Keras, CUDA, Unity, ROS  
*Technologies:* Docker, AWS, Azure  
*Other:* 10+ years of experience with Linux systems, extensive experience with embedded systems development

**Language Skills** *Fluent:* Russian, English, French, German  
*Extensive experience:* Italian, Spanish, Swedish  
*Basic knowledge:* Chinese (Mandarin)

**First Author Publications**

- Fundamentals of Arthroscopic Surgery Training and beyond: a reinforcement learning exploration and benchmark (*IJCARS 2024*)
- Imitation Learning Using Generalized Sliced Wasserstein Distances (*NeurIPS 2024, in review*)
- Learning Causally Invariant Reward Functions From Diverse Demonstrations (*TMLR, in review*)
- Regularizing Adversarial Imitation Learning Using Causal Invariance (*ICML 2023 SCIS Workshop*)
- Poincaré Wasserstein Autoencoder (*NeurIPS 2018 Bayesian Deep Learning Workshop*)