+33 661399535
Nice, France
5sardorisrailov5@gmail.com

Israilov Sardor

Engineer/PhD

Portfolio: ss555.github.io/
google scholar
linkedin.com/in/sardorisrailov/

I have a **PhD** in AI/Robotics at **I3S**/**Inria**/**INPHYNI** labs with focust on Deep Reinforcement Learning applied on robotics systems. I have an MS major in Image&Signal processing from **INSA Lyon** with a 3-year apprenticeship at Solystic. I have hands-on experience in SWE, Robotics and Computer Vision.

Skills

Tools and Languages	Python, Pytorch, OpenCV, Git, LaTeX, C++, Java, Algorithms, Matlab&Simulink, IoT, Raspberry/Arduino, Android Studio, SQL, ROS, RVIZ, AWS, Docker, 3D CAD modeling, C, VHDL, Makefile, Point Cloud
Mastery area	Deep reinforcement learning (DRL), Computer vision, Data analysis, Numerical simulations, Filtering
Communication	English, French, Russian, Uzbek(C1) | German(A2)

Research Experience (PhD at I3S/INPHYNI)

Machine learning applied on a robotic fish using sensors (video of my thesis) **Oct 2020 - Present**
I3S/INPHYNI *France, Nice : DS4H selective scholarship*

- Deep learning for swimming optimization of a robotic fish using camera, force sensors, IMU and raspberry pi.
- Numerical simulations, dynamics modeling, identification and simulation of robotic fish. (hardware developed, learning)
- Visual-servoing with VAE coupled with DRL. Speed and thrust optimization of an autonomous robotic fish via DRL.

Machine learning applied on a cart-Pole system ***(I3S joint with Inria)***

- DRL control of a cart-pole in simulation and real setup; Dynamics identification and sim2real transfer of a control policy; mechanical Development (CAO) and installation of an experimental setup.

Teaching workshops in deep Reinforcement Learning in Pytorch | Colloquium Posters

Current articles :

Submitted to Nature Communications. **Optimum control strategies for maximum thrust production ...**
PLOS ONE **Reinforcement learning approach to control an inverted pendulum: A general framework for educational purposes**
IEEE transactions on ultrasonics **LU-Net: A Multistage Attention Network to Improve the Robustness of Segmentation of ...**
In process. **Learning to swim fast with deep reinforcement learning**

Technical Experience

Robotics R&D apprentice for motorization of Autonomous Guided Vehicle (AGV) **Sep 2019 — Sep 2020**
Solystic *France, Alixan*

- Motorization study for AGV with real robot testing; data analysis and simulations with python and Matlab&Simulink
- Empty tray detection using python/c++ OpenCV
- Preliminary CAD conception of swerve drive for AGV with CatiaV5 software

Mechatronics R&D apprentice for Industrial Automation **Sep 2017 — Sep 2019**
Solystic *France, Alixan*

- PLC coding of functional blocks in CodeSys and SoMachine for industrial automation and safety applications (Schneider M251)
- Library (FBD in CodeSys) for conveyors with roller-motors using AS-I and MODBUS protocols with simulation (visualization)
- Development of sizing tools in Matlab to guide the choice of electric motors and motor drives

Expatriate mission for postal-sorting machine installation **June 2019 — August 2019**
Solystic *Italy, Bologna and Rome*

- Integration and Qualification of automation and safety equipments with Schneider SoMachine and SICK FlexiSoft

Technico-Commercial Internship **July 2016 — August 2016**
Vertiv (EMERSON Network Power) *Tashkent, Uzbekistan*

- Start-up and maintenance of UPS (Uninterruptible Power Supply), assembly of battery cabinets.

Education

PhD, *Université Côte d'Azur : I3S/INPHYNI* 2020-2024
Master of Science, *INSA Lyon* 2020

- *Electrical Engineering (specialization:* ***Image and Signal Processing****)* 2017 — 2020
- *Integrated PREPAratory courses section SCAN - Sciences in English* 2015 — 2017

Online courses: *Udacity Robotics [SLAM, Deep RL on robotic arm,Gazebo pick&place,Follow me (unity)],*
Machine Learning [sentiment analysis using AWS, Starbucks data analysis](AWS sponsored)| Labview Associate Developer...(linkedin)

Activities

Robotics competition **CdF robotique** with "Clubelek" INSA Lyon 2017-2018
Karate (Black belt), Judo (green belt), Chess (national medalist & ELO: 1969), AISECer, Ski, Swimming present