Maciej **Żurad**

MACHINE LEARNING & COMPUTER VISION ENGINEER

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Experience

Machine Learning & Computer Vision Engineer
Belval, Luxembourg

LMO
May. 2023 - Present

- Research and development of in-orbit servicing and space situational awareness (SSA)
- Leading ML training efforts; building tools and processes to automate and streamline experiments and model training pipelines

Lead Data Scientist & ML Engineer
Luxembourg

YOBA SA
Dec. 2018 - Apr. 2023

- Data-driven optimization of business processes in retail lending
- Developing and deploying ML models for credit scoring
- Scraping public data sites to power corporate credit scoring engines
- Working on ML-based template-free invoice scanning
- Automating reporting and analysis tools
- Building tools for market research for corporate lending

Robotics Software Engineer
Luxembourg

AUTOMATION & ROBOTICS RESEARCH GROUP - INTERDISCIPLINARY CENTRE FOR SECURITY, RELIABILITY AND TRUST (SNT)
Feb. 2018 - Sep. 2018

- Working on a proof-of-concept for autonomous airplane and bridge inspection using UAVs
- Development of robot process monitoring software (ROS, C++11)
- Development of sensor fusion components (ROS, C++11)
- Systems integration and administration using ROS and Linux

Research Assistant
Luxembourg

AUTOMATION & ROBOTICS RESEARCH GROUP - INTERDISCIPLINARY CENTRE FOR SECURITY, RELIABILITY AND TRUST (SNT)
Nov. 2015 - Jun. 2016 &
Apr. 2017 - Nov. 2017

- Qualified to finals of the 2016 DJI Developer Challenge
- Development and configuration of robotics systems for UAVs in ROS using C++/Python
- Preparing and running research experiments with UAVs

Robotics Software Engineer
Luxembourg

AUTOMATION & ROBOTICS RESEARCH GROUP - INTERDISCIPLINARY CENTRE FOR SECURITY, RELIABILITY AND TRUST (SNT)
Feb. 2015 - Sep. 2015

- Lead Programmer and System Integrator of CoRobots project for MUDAM robotics exhibition *"Eppur Si Mouve"*
- Programming behaviors for NAO humanoid robot in ROS using C++/Python
- Development of LED lighting for UAV using ARM microcontroller and node.js
- Development of software that orchestrates actions of a UAV and NAO robots using motion capture system
- OS administration of various Linux-based robotics systems (Gentoo, Ubuntu, BusyBox)

Research Assistant
Luxembourg

ICR RESEARCH GROUP, UNIVERSITY OF LUXEMBOURG
Jan. 2014 - Aug. 2014

- Solved localization in ROS for NAO humanoid robots using fiducial markers
- Developed bindings from Prolog to C for fast matrix multiplications
- Prepared course material for a new university advanced robotics class

Software Engineer Intern
Poznan, Poland

SYGNITY S.A.
July 2012

- Database migration from Excel to Oracle DB using Pentaho ETL software and JavaScript
- Development of XSLT forms in banking applications

Education

M.Sc. in Information and Computer Sciences
Luxembourg

UNIVERSITY OF LUXEMBOURG
Sep. 2015 - Feb. 2018

- GPA: Excellent (18.5 / 20.0)
- Dual specialization: Artificial Intelligence and Information Security
- Master Thesis: *Deep Convolutional Neural Networks for Camera Relocalization* (Grade: 19.0/20.0)
- Intensive Study Programme in Information Security (ParIS project) in Lisbon, Portugal

Masters Exchange Student
Singapore

NANYANG TECHNOLOGICAL UNIVERSITY (NTU)

Jul. 2016 - Dec. 2016

- Studying Machine Learning, Computer Vision, Neural Networks, Fuzzy Systems and Embedded SW Dev

B.Sc.Eng in Computer Science
Poznan, Poland

POZNAN UNIVERSITY OF TECHNOLOGY

Oct. 2011 - Feb. 2015

- GPA: 4.43 / 5.0
- Member of Distributed Systems Group Student Club (2012 - 2013)
- Erasmus Exchange to University of Luxembourg (2013 - 2014)
- Diploma Thesis: *Design and implementation of communication protocols for self-organizing multi-hop ad hoc networks using XbeePRO-868 platform*

Awards

Finalist @ NASA Space Robotics Challenge
Remote

TEAM MOONRAIDERS

Jan - July 2021

- ROS Lead and Machine Learning Specialist
- Created data generation pipeline for 6-DOF Pose Estimation task
- Developed and integrated pose estimation neural net with ROS

Top Student Award @ uni.lu
Tokyo, Japan

SOPHIA UNIVERSITY

July - Aug 2017

- Scholarship for Summer School in Asian Studies

Winner @ LuxBlockHackathon
Luxembourg, Luxembourg

WINNING TEAM OF 750.000 XLM ∼ 37.000 USD

8-9 May 2017

- Development of a Decentralized Asset Management solution with Privacy and Know-Your-Customer regulations compliance on the Ethereum platform

Open source projects

fincontracts
NODE.JS PACKAGES

- `https://doc.esdoc.org/github.com/asiron/fincontracts-lib`
- Interacting with FinContracts deployed on Ethereum blockchain
- Fully asynchronous code, based on async/await
- Example application using vorpal.js

robot_activity
ROS PACKAGE

- `http://wiki.ros.org/robot_activity`
- Controllable node lifecycle in ROS
- Automatically manages subscribers and services for you
- Allows for creation of super-nodes
- Dead simple API & integration with a supervisor

Publications

Target Tracking Optimization of UAV Swarms based on Dual-Pheromone Clustering
Best Paper Award

CYBERNETICS (CYBCONF), 2017 IEEE 3RD INTERNATIONAL CONFERENCE ON

21-23 June 2017

- Maciej Zurad, Laurent Hentges, Leandro Gomes, Matthias Brust, Gregoire Danoy, Pascal Bouvry

Towards an Autonomous Vision-Based Unmanned Aerial System against Wildlife Poachers
Journal Publication

SENSORS 2015

12 Dec. 2015

- Miguel A. Olivares-Mendez, Changhong Fu, Philippe Ludivig, Tegawendé F. Bissyandé, Somasundar Kannan, Maciej Zurad, Arun Annaiyan, Holger Voos and Pascual Campoy

About me

General	Fast learner, Analytical mindset, Can-do attitude, Team player
CS Skills	Data Science, Machine Learning, Deep Learning, Robotics, Linux, Embedded, Mathematics
Programming Languages	Python (proficient), SQL (proficient), node.js (proficient), C/C++11 (proficient), JAVA (proficient)
ML Toolkits	tensorflow, keras, sklearn, pandas, numpy, scipy, matplotlib
Languages	English (proficient), Spanish (intermediate), Polish (native)
Sports & Hobbies	Cycling, Bouldering, Hiking, Electronics, Home Automation