Denis Hadjivelichkov

PhD Candidate at CDT Foundational AI, UCL

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Education	
University College London (United Kingdom), PhD at the CDT for Foundational Artificial Intelligence, Topics: Imitation Learning and Self-Supervised Learning for Robotics Part of the Robot Perception and Learning Lab led by Dr. Dimitrios Kanoulas	2020 – Present
University College London (United Kingdom), MSc Robotics and Computation – 1st Class Distinction Topics: Robotics, Machine Learning, Graphical Models, Multi-Agent RL	2019 – 2020
University of Manchester (United Kingdom), BEng Mechatronic Engineering with Industrial Experience – Grade: 82%, 1st Class Topics: Robotics, Mechanics, Electronics, Control Systems, Mathematics	2015 – 2019

Work Experience	
Teaching Assistant, UCL • Assisted in teaching for MSc module Robot Sensing, Interaction and Manipulation • Assisted in curriculum creation, student supervision and assessment	2020 – Present
Design and Verification Engineer (Image and Vision), Arm • Designed and verified image processor modules in SystemVerilog. • Performed optimization, synthesis and linting of hardware code. • Work was successfully integrated into marketed products	2017 – 2018
Summer Intern for Computer Vision, University of Manchester • Implemented **face detection** and **recognition** methods (Eigenface, Fisherface, LBP) • Developed a mobile video face recognition system on a RaspberryPi • Integrated the system with a speech recognition module	2016 – 2016

Research Experience	
MSc Dissertation **Whole-body Control of a Mobile Manipulator using Reinforcement Learning** • Trained a mobile manipulator to avoid obstacles and reach goal • Used state-of-the-art agent and explored several directions of improvement • Achieved a 24% higher success rate than the baseline.	2019 – 2020
BEng Dissertation, **Localization of Weeds in Aerial Images** • Developed a model combining image processing and supervised learning to detect a particular species of carcinogenic weeds in aerial images. • Dealt with the problem of limited data and viewpoint mismatch. • Achieved a high final recall rate.	2018 – 2019

Projects and Awards

Embedded Systems Project, University of Manchester • Designed and developed an **autonomous buggy** that navigates and overcomes obstacles using PID control. • Won the Prize for Best Software Documentation.	2016 – 2017
Second Place for the project AskNigel, Student Hack IV (Manchester) • Within 24 hours as part of a team, developed an **animatronic assistant** that answers spoken questions and provides local recommendations • Integrated with several commercial APIs	2016

Volunteering

Robogals Manchester Volunteering Society – **Marketing Manager** • Led and promoted basic robot programming workshops for young girls • Ensured that the workshops were engaging and useful	2016 – 2017
University of Manchester – **PASS Leader** • Assisted new students with their studies and their orientation at university • Achieved the certificate for highest turnout	2016 – 2017

Skills

Programming Languages	Strong command of **Python, C++, MATLAB**, SystemVerilog. Fair command of Perl, MySQL, LabVIEW, HTML
Machine Learning	Strong command of common packages (**PyTorch**, **openCV**, **Tensorflow**, PyBullet) Worked extensively with learning models spanning reinforcement learning, self-supervised learning, computer vision.
Robotics	Strong command of **Robot Operating System (ROS)**, Gazebo, Eigen, PCL, KDL Deep understanding of kinematics, dynamics and control systems.
Computer Vision	Strong command of various computer vision methods for recognition, detection, dimensionality reduction (Viola-Jones, Eigenface, PCA, CNNs)
Other Tecnnical	Worked with version control (git, svn). Experienced with **concurrent systems**, High Performance Computing.
Soft Skills	Extensive experience with both collaborative and independent work, taking accountability over my own product and effective time management.

Languages

Bulgarian	Native language
English	Fluent, (**C2 Proficient**) Certificate for Advanced English – A
German	Fluent, (**C2 – Proficient**) Test für Deutsch als Fremdsprache – 5,5,5,4

References available upon request.