

MARTIN ANDREEV ASENOV

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EDUCATION

The University of Edinburgh and Heriot-Watt University Sep 2017 - Feb 2022

Ph.D. in Robotics and Autonomous Systems

- “Architectures for Online Simulation-Based Inference Applied to Robot Motion Planning”
- Supervised by Prof. Subramanian Ramamoorthy and Dr. Kartic Subr

The University of Edinburgh

Sep 2016 - Aug 2017

MRes in Robotics and Autonomous Systems

- “Active Sensing of Spatiotemporal Phenomena with a UAV”
- Supervised by Prof. Subramanian Ramamoorthy

The University of California, Irvine

Sep 2014 - Jun 2015

International Exchange Student

- Favorite courses: Neural Networks and Deep Learning, Image Understanding, Computer Photography and Vision

The University of Edinburgh

Sep 2012 - May 2016

BSc (Hons) Artificial Intelligence and Computer Science

- “Dynamic Model of Interactions Between Orientation Selective Neurons in Primary Visual Cortex”
- Supervised by Dr. Mark van Rossum

PUBLICATIONS

Vision-Based System Identification and 3D Keypoint Discovery using Dynamics Constraints, M. Jaques, M. Asenov, M. Burke, T. Hospedales, **NeurIPS Workshop on Physical Reasoning and Inductive Biases for the Real World**, 2021

Inversion of Ultrafast X-ray Scattering with Dynamics Constraints, M. Asenov, N. Zotev, S. Ramamoorthy, A. Kirrander, **NeurIPS Workshop on Machine Learning and the Physical Sciences**, 2020

Vid2Param: Modelling of Dynamics Parameters from Video, M. Asenov, M. Burke, D. Angelov, T. Davchev, K. Subr, S. Ramamoorthy, **IEEE Robotics and Automation Letters (RAL)**, Vol 5(2): 414-421. Presented at the IEEE International Conference on Robotics and Automation (ICRA), 2020

Active Localization of Gas Leaks using Fluid Simulation, M. Asenov, M. Rutkauskas, D.T. Reid, K. Subr, S. Ramamoorthy, **IEEE Robotics and Automation Letters (RAL)**, Vol 4(2): 1776-1783. Presented at the IEEE International Conference on Robotics and Automation (ICRA), 2019

Autonomous Multi-species Environmental Gas Sensing using Drone-based Fourier-transform Infrared Spectroscopy, M. Rutkauskas, M. Asenov, S. Ramamoorthy, D.T. Reid, **Optics Express**, 2019

Active Sensing of Spatiotemporal Phenomena with a UAV, M. Asenov, **MSc Thesis**, The University of Edinburgh, 2017

Dynamic Model of Interactions between Orientation Selective Neurons in Primary Visual Cortex, M. Asenov, **BSc Thesis**, The University of Edinburgh, 2016

WORK EXPERIENCE

Hyperscience

Machine Learning Engineer

Apr 2022 - Current
Edinburgh, UK

- Improving rotation correction of documents with data augmentation

The University of Edinburgh

Research Associate

Apr 2021 - March 2022
Edinburgh, UK

- Breast cancer classification based on combined pCLE images and raman spectroscopy
- Adaptive scanning strategies for ultrasound examinations

The University of Edinburgh

Teaching Assistant and Tutor

Sep 2019 - Dec 2019
Edinburgh, UK

- Prepared materials for 8 tutorials for Computer Graphics
- Guest Lecture on 'Graphics simulators in robotics'

Amazon, PrimeAir

Research Applied Scientist

Oct 2018 - Dec 2018
Graz, Austria

- Worked on image segmentation from limited data using domain adaption

Defense Science and Technology Laboratory

Research Assistant

Jan 2017 - Jun 2017; Nov 2017 - Sep 2018
Edinburgh, UK

- Collaboration between Heriot-Watt University, BMT and REDALERT
- Data driven fluid simulation approach to characterize gas dynamics

The University of Edinburgh

Tutor

Jan 2016 - May 2016
Edinburgh, UK

- Prepared materials and conducted 9 tutorials for Object-Orientated Programming
- Tutored the Advanced tutorials for the course, answered and helped with additional questions

Thales Avionics

Software Integration and Characterization Developer

Jul 2015 - Aug 2015
Irvine, California, USA

- Extended the Google's Blockly visual programming editor to a test automation tool
- Assisted in training a support vector machine, estimating performance tests

Avid Academy for Gifted Youth

Math Tutor and Web Developer

Dec 2014 - May 2015
Irvine, California, USA

- Prepared students for the AIME and AMC math competitions
- Developed educational-focused web content management system using Django

Edinburgh University Students Association

Web Developer and IT Infrastructure Technician

April 2014 - Aug 2014
Edinburgh, UK

- Developed web content management system using Django
- Web server management, including recovering after our servers were compromised

Commquest Ltd

Junior Programmer

Jun 2013 - Jul 2013
Sofia, Bulgaria

- Developed crossword game for the iPhone using Objective-C
- Developed Android game using PhoneGap

POSITIONS OF RESPONSIBILITY & EXTRA CURRICULAR

Resident Assistant Sep 2015 - Aug 2018

- Organized more than 17 events per year, helped students with any academic or personal matter

Representational Roles Sep 2012 - Current

Student Ambassador, Cohort Student Representative, Informatics School Representative, etc.

- Collecting students' feedback, organized Informatics Ceilidh for more than 200 students
- Toured potential informatics students

EdIntelligence Committee Member Sep 2017 - Current

- Helped to organize events such as career fairs, lectures, movie screenings, etc.; maintaining the website

Bulgarian National Dances Sep 2013 - Current

- Took part in numerous semi-professional events: International Evening, 6th Syn Festival Baharat-Spices of Eastern Music, 33th and 34th Annual University of Edinburgh Dance Performance, Concert 'Bulgarians from New Times', Concert for the Liberation Day of Bulgaria

Cycling April 2019

- Cycled all around Scotland, took part in 256 miles bike ride with Mark Beaumont, raising 400£

TALKS

Robot Learning Using Physics-Informed Models 18th of October, 2019

Guest Lecture, Computer Graphics, The University of Edinburgh

Gaussian Processes. Theory and Applications 8th of March, 2017

Open Tech Meetup, Skyscanner, Edinburgh, UK

Gaussian Processes - When Neural Networks are not Enough 29th of July, 2017

SoftUni, Sofia, Bulgaria

AWARDS

Best Case Study, Edinburgh Robotics Annual Conference 8th October, 2019

Principal's Go Abroad Fund, attended Open Source Conference in Hong Kong June, 2016

Gold Medal, Scottish Boat Race 28th May, 2016

Silver Medal, BUCS Regatta 1st May, 2016

Dean's Choice Award, UAV Forge: Innovation for Personal Autonomous Systems March, 2015

Award for best UI, Smart Data Hack Feb, 2013

SKILLS

Languages Bulgarian (native), English (fluent)

Leadership Team leader of more than 50 students for building an autonomous quadcopter

Cross-cultural Lived in UK, USA, Austria and Bulgaria. Travelled to more than 20 countries