# MARTIN ASENOV

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## EDUCATION

**The University of Edinburgh** — Sep 2017 - Present
*Ph.D. in Robotics and Autonomous Systems*

· Supervised by Dr. 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 Dr. Subramanian Ramamoorthy

**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

**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

## PUBLICATIONS

**M. Asenov**, M. Burke, D. Angelov, T. Davchev, K. Subr, S. Ramamoorthy, 'Vid2Param: Modelling of Dynamics Parameters from Video', *IEEE Robotics and Automation Letters*, 2019

**M. Asenov**, M. Rutkauskas, D.T. Reid, K. Subr, S. Ramamoorthy, 'Active Localization of Gas Leaks using Fluid Simulation', *IEEE Robotics and Automation Letters, presented at the International Conference on Robotics and Automation*, 2019

M. Rutkauskas, **M. Asenov**, S. Ramamoorthy, D.T. Reid, 'Autonomous multi-species environmental gas sensing using drone-based Fourier-transform infrared spectroscopy', *Optics Express*, 2019

**M. Asenov**, 'Active sensing of spatiotemporal phenomena with a UAV', *MSc thesis*, The University of Edinburgh, 2017

**M. Asenov**, 'Dynamic model of interactions between orientation selective neurons in primary visual cortex', *BSc thesis*, The University of Edinburgh, 2016

C. Prijic, **M. Asenov**, R. Wilson, J. Ortega, A. Hashemi, C. Pisuraj, A. Sargsyan, E. Wengert, 'UAV Forge: Innovation for Personal Autonomous Systems', *eScholarship*, University of California, Irvine, 2015

## WORK EXPERIENCE

**Amazon, PrimeAir** — Graz, Austria, Oct 2018 - Dec 2018
*Research Applied Scientist*

· Worked on image segmentation from limited data using domain adaption

### Defense Science and Technology Laboratory
*Research Assistant*

Edinburgh, UK, Nov 2017 - Sep 2018

· Collaboration with Heriot-Watt University, BMT and REDALERT, extending on the stage one project
· Data driven fluid simulation approach to characterize gas dynamics

### Defense Science and Technology Laboratory
*Research Assistant*

Edinburgh, UK, Jan 2017 - Jun 2017

· Stage one funded project for detecting and mapping hazardous gases
· Collaboration with Heriot-Watt University, developing a UAV-mounted broadband spectrometer
· Implementing active sensing gas localization and mapping approaches based on Gaussian Processes

### The University of Edinburgh
*Tutor*

Edinburgh, UK, Jan 2016 - May 2016

· 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*

Irvine, California, USA, Jul 2015 - Aug 2015

· Able to save two million dollars, due to reduced test creation and execution time (estimated for 5 years)
· Extended the Google's Blockly visual programming editor to a test automation tool
· Assisted in training a support vector machine, estimating performance tests, without running them

### Avid Academy for Gifted Youth
*Math Tutor and Web Developer*

Irvine, California, USA, Dec 2014 - May 2015

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

### Edinburgh University Students Association (EUSA)
*Web Developer and IT Infrastructure Technician*

Edinburgh, UK, April 2014 - Aug 2014

· IT support for more than 30 venues during Edinburgh Fringe, the largest art festival in the world
· Developed web content management system in Django, participated in all phases of development cycle
· Web server management, including recovering after our servers were compromised

### Commquest Ltd
*Junior Programmer*

Sofia, Bulgaria, Jun 2013 – Jul 2013

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

## PROJECTS

### Convolutional Neural Networks

Apr 2015 - Jun 2015

· Developed neural network, able to extract 3D information from a single, unedited picture
· Trained on MPI Sintel Dataset, computer generated movie with ground truth available

### UAV Forge: Innovation for Personal Autonomous Systems

Sep 2014 - Mar 2015

· Won Dean's Choice award
· Implemented path finding and obstacle avoidance using LIDAR, compressing data in octrees
· Team leader of the Artificial Intelligence/Computer Vision part of the team

### Smart Data Hack                                                          Feb 2013

· Won award for best UI
· Using a database from the Edinburgh Council our team created 3d interactive cube-map

### Barclays Hackathon                                                       Dec 2014

· Developed system similar to Google Now/Apple's Siri, but for phones without Internet connection
· Sending a text message with a question, a response with the answer is sent back

## 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, origanized Informatics Ceilidh for more than 200 students
· Toured potential informatics students

### EdIntelligence Committee Member                                 Sep 2017 - Current

· Helped organizing events such as career fairs, lectures, movie screenings, etc.; maitaining 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£

## AWARDS

**Best case study**, Edinburgh Robotics Annual Conference, 2019

**Silver medal**, BUCS Regatta, 2016

**Gold medal**, Scottish Boat Race, 2016

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

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

**Award for best UI**, Smart Data Hack, 2013

## 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*

## SKILLS

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|---|---|
| **Languages** | Bulgarian (native), English (fluent) |
| **Leadership** | One of the team leaders of more than 50 students for building autonomous quadcopter |
| **Cross-cultural** | Lived in UK, USA, Austria and Bulgaria. Travelled to more than 20 different countries |

## REFERENCES

Available upon request.