

# Iulia Duta

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## EDUCATION

**University of Bucharest, Romania**

*Oct. 2016 – June 2018*

*M.Sc. in Artificial Intelligence*

GPA 10/10, Rank: 1/50 (*Valedictorian distinction*)

**University of Bucharest, Romania**

*Oct. 2013 – June 2016*

*B.Sc. in Mathematics and Computer Science*

GPA 9.97/10, Rank: 1/270 (*Valedictorian distinction*)

## PUBLICATIONS

**Recurrent Space-time Graph Neural Networks.** Andrei Liviu Nicolicioiu\*, **Iulia Duta\*** and Marius Leordeanu.

*Advances in Neural Information Processing Systems (NeurIPS 2019).*

**Mining for meaning: from vision to language through multiple networks consensus.** Iulia Duta\*, Andrei Liviu Nicolicioiu\*, Simion-Vlad Bogolin and Marius Leordeanu.

*The British Machine Vision Conference (BMVC 2018).*

## RESEARCH PROJECTS

**Effective Receptive Field for Graph Neural Networks**

*Worked with Andrei Nicolicioiu (Under Submission)*

Analysed theoretically and empirically the effective receptive field of different graph neural network such as Graph Convolutional Network and Self-Attention model.

**Graph-based Video Understanding**

*Worked with Andrei Nicolicioiu and Marius Leordeanu*

Introduced a recurrent graph neural network that process a video by message-passing between nodes both spatially and temporally, in a factorised way, used for action recognition task.

**Video Captioning**

*Worked with Andrei Nicolicioiu and Marius Leordeanu (Master Thesis - University of Bucharest)*

Developed several architectures to encode the videos content and introduce a novel method, based on consensus between models outputs, to extract the best caption for each video.

**Multi-Label Classification**

*Worked with Andrei Nicolicioiu and Marius Leordeanu*

Studied models for multi-label classification applied in video, based on the correlation between predicted labels and select the strongest cluster according to the correlation matrix.

## OTHER PROJECTS

### Computational Geometry & Computer Vision:

*Advised by Prof. Sorin Stupariu (Bachelor Thesis - University of Bucharest)*

Created an application based on classical computer vision approaches to detect and reconstruct the 3D space represented in a topographic map using only JPEG images as input.

## AWARDS

Romanian Olympiad in Mathematics	gold medal	2010
	silver medal	2007, 2008, 2011, 2012, 2013
	bronze medal	2009
ACM Southeastern European Region	Finalist	2014
ACM National Contest	Finalist	2014, 2015
Extended team of Romania for International Mathematical Olympiad (IMO)		2008

## EXPERIENCE

### Machine Learning Researcher at Bitdefender

*Nov 2016 – Present*

I work on challenging research projects involving supervised methods for video analysis. We design methods to solve current issues from this field. Currently, we are interested in graph-based neural network models for video understanding.

### Teaching Assistant

*Oct 2016 – Present*

Organize and coordinate laboratories and seminars for *Data Structure and Algorithms* course at the University of Bucharest, Department of Computer Science

*Feb 2019 – Present*

Natural Language Processing lecture for the *Deep Learning* optional course at the University of Bucharest, Department of Computer Science

## TALKS AT SEMINARS

### Computer Vision Seminar, IMAR Bucharest

*Recent approaches in Graph Neural Networks*

*Feb 2019*

### Deep Learning Group, Bucharest Deep Learning

*Weakly supervised approaches for Dense Captioning*

*Oct 2017*

### Conference on Recent Advances in Artificial Intelligence, University of Bucharest. (RAAI) 2019

*June*

Present our work on Recurrent Space-time Graph Neural Network

## MISC

### EEML 2019 (Eastern European Machine Learning Summer School)

*June 2019*

Teaching Assistant for Labs Session at Eastern European Machine Learning Summer School, including Computer Vision, Generative Models and Reinforcement Learning.

**Reviewer activity**

ICCV 2019, AAAI 2020, CVPR 2020, ECCV 2020

**Helper at Infoarena** (<http://infoarena.ro>)

2014 – 2018

Infoarena is a non-profit organization that helps students learn programming, computer science and develop open source projects. I was involved in areas that include organizing algorithmic competitions.

**Tutor for Mathematics and Computer Science**

Tutored students in mathematics courses and algorithmic concepts.

**SKILLS**

Strong mathematical and algorithmic background

Tensorflow - advanced

Python, C/C++ - advanced

Linux - medium

Matlab, Haskell, OpenGL - basic

Romanian - mother tongue

English - good

French - basic