Iulia Duta

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EDUCATION

University of Bucharest, **Romania**   *Oct. 2016 – June 2018*
M.Sc. in Artificial Intelligence
GPA 10/10, 1st out of 50 students (*Valedictorian distinction*)

University of Bucharest, Romania   *Oct. 2013 – June 2016*
B.Sc. in Mathematics and Computer Science
GPA 9.97/10, 1st out of 270 students (*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)   *June 2019*
Present our work on Recurrent Space-time Graph Neural Network

MISC

EEML 2019   *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.

TECHNICAL SKILLS

Strong mathematical and algorithmic background
Tensorflow   - advanced
Python, C/C++   - advanced
Linux   - medium
Matlab, Haskell, OpenGL   - basic

LANGUAGES

Romanian   - mother tongue
English   - good
French   - basic