

# Andrei Liviu Nicolicioiu

## Personal Data

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## Education

2016–2018	<b>MSc in Artificial Intelligence, Faculty of Automatic Control and Computer Science, University Politehnica of Bucharest.</b>
2012–2016	<b>BSc in Computer Science and Engineering, Faculty of Automatic Control and Computer Science, University Politehnica of Bucharest.</b>

## Work Experience

Oct.2016–present	<b>Machine Learning Researcher, Bitdefender</b> I am part of a research team, my focus being deep learning methods for Computer Vision. I mainly worked on multi-label classification in video and video captioning. Currently, I research neural graph-based methods for video understanding
Jul.2015–Sep. 2015	<b>Image Processing Intern, Fotonation</b> Worked on a project for applying effects on videos based on depth information. I worked mainly on segmentation and seamless blending of images. Designed and prototyped (in Matlab) different algorithms then implemented them in C.

## Publications

NeurIPS 2021	<b>Discovering Dynamic Salient Regions with Spatio-Temporal Graph Neural Networks</b> Iulia Duta*, Andrei Nicolicioiu*, and Marius Leordeanu. <i>Conference on Neural Information Processing Systems (NeurIPS 2021)</i> <a href="#">Link</a>
ORLR workshop @NeurIPS 2020	<b>Dynamic Regions Graph Neural Networks for Spatio-Temporal Reasoning</b> Iulia Duta*, Andrei Nicolicioiu*, and Marius Leordeanu. <i>NeurIPS 2020 Workshop on Object Representations for Learning and Reasoning (ORLR @ NeurIPS 2020)</i> <a href="#">Link</a>
NeurIPS 2019	<b>Recurrent Space Time Graph Neural Networks</b> Andrei Nicolicioiu*, Iulia Duta*, and Marius Leordeanu. <i>Conference on Neural Information Processing Systems (NeurIPS 2019)</i> . <a href="#">Link</a>
BMVC 2018	<b>Mining for meaning: from vision to language through multiple networks consensus</b> Iulia Duta*, Andrei Nicolicioiu*, Simion-Vlad Bogolin and Marius Leordeanu. <i>British Machine Vision Conference (BMVC 2018)</i> . <a href="#">Link</a>

## Research Projects

2020	<b>Effective Receptive Field for Graph Neural Networks</b> With Iulia Duta Study the effective receptive field of graph convolutional networks and self-attention layers and its impact on learning stability. <a href="#">Link</a>
2020	<b>Few-shot learning</b> With Armand Nicolicioiu Research in few-shot learning by developing a method that uses GNNs to adapt sample features to a context given by class prototypes. <a href="#">Link</a>
2017	<b>Multi-label classification in video</b> With Iulia Duta and Marius Leordeanu Studied recurrent models for multi-label prediction and the effect of global context. Investigated the usage of the labels correlation matrix together with the network prediction, to select the strongest cluster of labels.
2016	<b>Deep Occlusion Region Detection in Video</b> <i>Bachelor's Thesis - UPB.</i> Advised by Prof. Marius Leordeanu Developed a method for detecting occluded zones in a video using a fully convolutional model with three branches for multi-model input, with feature alignment by optical flow and second stage refinement.

## Teaching Experience

2016 - present	Teaching Assistat at UPB. <i>Signal Processing</i> course taught by Prof. Marios Choudary. Propose assignments and assist students with the laboratory, propose homework assignments and advise and grade the students final course projects.
2019 - present	Industry Invited speaker at University of Bucharest. <i>Deep Learning</i> course taught by me and my colleagues at Bitdefender. Presented three lectures on GNNs and Deep Learning methods for Computer Vision. Proposed laboratory and homework assignments and supervise students on their final course project.
2019, 2020	Teaching Assistat at Eastern European Machine Learning Summer School (EEML). Assisted students with the laboratory assignments.
2019	Supervise Bachelor's Thesis at UPB. With Marius Leordeanu, co-supervised Armand Nicolicioiu on his Bachelor's thesis: <i>Meta-Learning for Few-Shot Classification</i> .

## Awards

2016, 2018	UPB Student Research Competition - Artificial Intelligence - First Prize(2018), Second Prize(2016)
2014, 2015	South Eastern European Mathematical Olympiad - Silver Medal (2014), Bronze Medal(2013)
2013	Intel Perceptual Computing Projects Award - 1st Place
2009, 2010, 2012	National Mathematics Olympiad of Romania - Bronze Medal
2006 - 2012	Finalist in National Olympiad in Informatics (2006) Physics (2009, 2011), Mathematics (2007, 2009-2012)

## Talks

Dec. 2021	<i>Discovering Dynamic Salient Regions for Spatio-Temporal Graph Neural Networks</i> . Poster at NeurIPS 2021 (Virtual).
Jul. 2021	<i>Graph Neural Networks and Transformers in Vision</i> . Human Pose Recovery and Behavior Analysis Group - University of Barcelona
Jun. 2021	<i>Introduction to Graph Neural Networks</i> . Strasbourg Deep Learning Meetup.
Dec. 2019	<i>Recurrent Space Time Graph Neural Network</i> . Poster at Conference on Neural Information Processing Systems (NeurIPS 2019), Vancouver, Canada.
Sep. 2018	<i>Mining for meaning: from vision to language through multiple networks consensus</i> . Poster at <i>British Machine Vision Conference (BMVC 2018)</i> , Newcastle, UK.
Nov. 2017	<i>Describing images and videos in natural language</i> , Presented at Bucharest Computer Vision Group, "Simion Stoilow" Institute of Mathematics of the Romanian Academy.
July. 2017	<i>Overview of multi-label classification in video</i> . Presented at Bucharest Deep Learning Meetup, University of Bucharest, Romania.
Feb. 2017	<i>Learning to segment and refine</i> , Presented at Bucharest Computer Vision Group, "Simion Stoilow" Institute of Mathematics of the Romanian Academy.

## Other

Reviewer	ICCV 2019, AAAI 2020, CVPR 2020, ECCV 2020 (top reviewer), ICML GRL+ 2020, NeurIPS 2020, AAAI 2021, ICLR 2021, ICML 2021, NeurIPS 2021
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## Technical Skills

Programming	Python, PyTorch, TensorFlow, Matlab, C
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