

# Andrei BURSUC

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📄 <https://abursuc.github.io/>

## Interests

Domains Computer Vision, Deep/Machine Learning

Research Deep neural networks, annotation-efficient learning (self-supervised, few-shot), learning representations, predictive uncertainty estimation, visual search

Personal Volunteering, education, reading, hiking, traveling

## Education

2012 **Doctorat ParisTech, PhD**, Mines ParisTech, Paris, France

- Specialization: Real time informatics, robotics and automation
- Thesis title: *Object based visual content indexing and retrieval*
- Advisors: Françoise PRETEUX and Titus ZAHARIA

2004 – 2009 **Engineer's Degree**, POLITEHNICA University of Bucharest, Faculty of Electronics, Telecommunications and Information Technology, Bucharest, Romania

- Specialization: Networks and Telecommunications Software
- Ranked 12<sup>th</sup> out of 248 students

## Professional experience

2018 – **Research Scientist**, *valeo.ai*, Paris, France

- Research on reliability of deep learning models
- Research on annotation-efficient learning for deep neural networks
- Leading technological transfer activities

2016 – 2018 **Research Scientist**, *Safran Tech*, Chateaufort, France

- Research on deep learning based perception for autonomous systems
- Co-supervision of a PhD candidate on *One Shot Learning* with deep neural networks

2015 – 2016 **Postdoctoral researcher**, *Inria Paris*, Willow Team within the Department of Computer Science of the Ecole Normale Supérieure, Paris, France

- Collaboration with Josef SIVIC and Ivan LAPTEV within FUI FluidTracks project
- Research on crowd analysis (density estimation, event recognition) from video content by means of deep neural networks

2014 – 2015 **Postdoctoral researcher**, *Inria Bretagne*, TEX-MEX Team, Rennes, France

- Collaboration with Hervé JEGOU within ANR FIRE-ID project
- Research on visual descriptors for images and local features using match kernel embeddings

2013 – 2014 **Postdoctoral researcher**, *Télécom SudParis*, ARTEMIS Team, Evry, France

- Collaboration with Titus ZAHARIA
- AAL-ANR ALICE project (*Assistance for Better Mobility and Improved Cognition of Elderly Blind and Visual Impaired*):
  - Research on algorithms for real-time obstacle detection and image-based localization on mobile devices worned by visually impaired persons
- FUI SmartCity+ project:
  - Elaboration of a text-based search engine for city related data: documents belonging to public institutions, hospitals, public transport, crowd-sourced user generated data

- 2009 – 2012 **Research engineer**, *Télécom SudParis*, ARTEMIS Team, Evry, France
  - *Ubimedia Joint Lab between Institut Télécom and Alcatel-Lucent Bell Labs*:
    - Research on modeling visual content for content-based video indexing and instance retrieval
    - Designed and implemented a web-platform for video navigation and content-based search
    - Participated in international benchmarks TRECVID (2011-2013) and MediaEval (2013)
- 2009 **Bachelor thesis internship**, *Télécom SudParis*, ARTEMIS Team, Evry, France
  - Designed and developed a MPEG-7 compatible multimedia web-based search engine
- 2008 **Internship**, *Schlumberger*, Drilling and Measurements, Hassi Messaoud, Algeria
  - Analyzed and optimized the maintenance and repair chain in a rig workshop
- 2007 **Internship**, *Tenaris Silcotub*, Logistics Department, Zalau, Romania
  - Designed and developed a database for managing factory storehouse daily operations

## Various Activities

- 2017 Lecturer for *Deep Learning - Do It Yourself!* at ENS Paris along with Marc Lelarge and Florent Krzakala (80 participants)
- 2014 Co-organizer of the micro-Workshop on Computer Vision Rennes (90 participants)
- 2010 – 2013 Member of the Administrative Council of SEFI (European Society for Engineering Education); network of institutions in higher education from 47 countries
- 2009 – 2011 Student representative in the EUGENE (EUropean and Global Engineering Education) Academic Network); network of 78 European universities and companies
- 2005 – 2010 Volunteering activity at BEST (Board of European Students of Technology).
- 2007 – 2008 Vice-President for Corporate Relations of Local BEST Group Bucharest. Managed the fund raising strategy and activities of a team of 50 students
- 2006 – 2007 Coordinator of *JobShop*<sup>®</sup> Bucharest - jobfair gathering 103 companies and approx. 5.000 participants. Managed a team of 40-50 students

## Skills Overview

- Programming *Experience* in Python, C, C++, Lua, Matlab, Javascript. *Familiar* with PHP, Java
- Libraries *Experience* in PyTorch, Torch, MatConvNet, OpenCV, Scikit-Learn, jQuery, Django
- Teaching Qualification Maître de Conférences, Section 27 - Informatique (2015)
- Languages **English** - Fluent; **French** - Fluent; **Romanian** - Native; **Italian** - Basic

## Honors and Awards

- 2021 Outstanding Reviewer: CVPR, NeurIPS
- 2020 Outstanding Reviewer: CVPR, ECCV, NeurIPS
- 2017 Outstanding Reviewer: ICCV, BMVC
- 2016 Outstanding Reviewer: ACCV
- 2007 – 2008 Orange Education Program Scholarship
- 2006 – 2008 Roberto Rocca Education Program Scholarship