Haller Emanuela

Bucharest, Romania

+40726317709
haller.emanuela@gmail.com
https://emanuelahaller.github.io/

Education

- **University Politehnica of Bucharest** Bucharest, Romania
  PhD - Computer Science and Information Technology (Summa cum laude) *2016 - 2022*
  - PhD Thesis: *Unsupervised Visual Learning by Exploiting the Spatio-Temporal Consistency of Highly Probable Positive Features*
    - Advisors: Prof Dr. Marius Leordeanu and Prof. Dr. Eng. Adina Magda Florea
- **University Politehnica of Bucharest** Bucharest, Romania
  MSc - Artificial Intelligence (GPA 9.90/10) *2013 - 2015*
  - Master Thesis: *Intelligent Object Tracking*
    - Advisor: Prof. Dr. Eng. Irina Mocanu
    - First prize, Scientific Communications Session 2013 (AI)
- **University Politehnica of Bucharest** Bucharest, Romania
  BSc - Computer Science and Information Technology (GPA 9.62/10) *2009 - 2013*
  - Bachelor Thesis: *Human Activity Recognition Base on Multiple Kinects*
    - Advisor: Prof. Dr. Eng. Irina Mocanu
    - Second prize, Scientific Communications Session 2013 (AI)
  - Other projects: *Chat-bot that Simulates an Historical Figure*
    - Advisor: Assoc. Prof. Dr. Eng. Traian Rebedea
    - Third prize, AI competition, CASIA 2012

Professional experience - Fundamental Research

- **Bitdefender** Bucharest, Romania
  Machine Learning Researcher *2018-present*
  - I am part of the AI and Crypto Unit at Bitdefender. My work is focused on the problem of unsupervised learning from visual data and I was also involved in projects applying machine learning algorithms over encrypted data.

- **Institute of Mathematics of the Romanian Academy** Bucharest, Romania
  Machine Learning Researcher *2016-2018*
  - I have worked on the problem of unsupervised learning from visual data.
- **Conference Reviewer**
  2019-present
  - International Conference in Computer Vision (ICCV) - 2019, 2021
  - Conference on Computer Vision and Pattern Recognition (CVPR) - 2020, 2021, 2022
  - Conference on Artificial Intelligence (AAAI) - 2020, 2021
  - European Conference on Computer Vision (ECCV) - 2020
  - Winter Conference on Applications of Computer Vision (WACV) - 2021
- **Journal Reviewer**
  2022-present
  - IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)

Professional experience - Industry

- **FotoNation, Xperi Corporation** Bucharest, Romania
  R&D Engineer *2014-2018*
  - I was part of the team working on the Driver Monitoring System, developing Computer Vision systems on the infrared spectrum, for tracking drivers' head and facial movements to raise alerts and take actions in potentially dangerous situations when the driver is not paying attention to the road.

Professional experience - Teaching

- **University of Bucharest** Bucharest, Romania
  Lecturer, Tutor *2020-present*
  - Introduction to Deep Learning - BSc course
  - Special topics in Security and Applied Logic - Deep Learning part - MSc course
- **Bitdefender** Bucharest, Romania
  Lecturer *2020*
  - DeepBit4PM Training - internal deep learning course for product managers
- **Bitdefender** Bucharest, Romania
  Tutor *2019*
  - DeepBit Training - internal deep learning course for engineers
- **EEML Summer School** Bucharest, Romania
  Teaching Assistant *2019*
- **University Politehnica of Bucharest** Bucharest, Romania
  Teaching Assistant *2014-2016*
  - Data Structures - BSc course

Research papers

- **Emanuela Haller**, Adina Magda Florea and Marius Leordeanu. *"Iterative Knowledge Exchange Between Deep Learning and Space-Time Spectral Clustering for Unsupervised Segmentation in Videos"*. Accepted at IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI) 2021
- **Emanuela Haller***, Elena Burceanu*, Marius Leordeanu. *"Self-Supervised Learning in Multi-Task Graphs through Iterative Consensus Shift"*. BMVA British Machine Vision Conference (BMVC) 2021 (* equal contribution)
- **Emanuela Haller**, Adina Magda Florea and Marius Leordeanu. *"Spacetime Graph Optimization for Video Object Segmentation"*. arXiv preprint arXiv:1907.03326, 2019
- **Emanuela Haller** and Marius Leordeanu. *"Unsupervised object segmentation in video by efficient selection of highly probable positive features"*. IEEE International Conference on Computer Vision (ICCV) 2021
- **Emanuela Haller**, Georgiana Scarlat, Irina Mocanu and Mihai Trăscău. *"Human Activity Recognition Based on Multiple Kinects"*. Springer Evaluating AAL Systems Through Competitive Benchmarking (EvAAL) 2013
- **Emanuela Haller** and Traian Rebedea. *"Designing a Chat-bot that Simulates an Historical Figure"*. IEEE International Conference on Control Systems and Computer Science (CSCS) 2013

Patents

- Florin Nanu, Stefan Petrescu, Florin Oprea and **Emanuela Haller**. *"Human monitoring system incorporating calibration methodology"*. US10740633B2, Filed: 10.02.2018, Granted: 08.11.2020
- Mihai Ciuc, Stefan Petrescu, **Emanuela Haller**, Florin Oprea, Alexandru Nicolaescu, Florin Nanu and Iulian Palade. *"Facial features tracker with advanced training for natural rendering of human faces in real-time"*. US10706577B2, Filed: 03.06.2018, Granted: 07.07.2020
- Elena Burceanu, Madalina Bolboceanu, **Emanuela Haller**, Georgiana Miruna Rosca, Bogdan Constantin Cebere, Radu Titiu. *"Privacy-Preserving Image Distribution"*. US Patent Application No. 17/305,324, Filed: 07.05.2021
- Elena Burceanu, Madalina Bolboceanu, **Emanuela Haller**, Georgiana Miruna Rosca, Bogdan Constantin Cebere, Radu Titiu. *"Image Distribution Using Composite Re-Encrypted Images"*. US Patent Application No. 17/305,322, Filed: 07.05.2021
- Bogdan Constantin Cebere, Elena Burceanu, Madalina Bolboceanu, **Emanuela Haller**, Georgiana Miruna Rosca, Radu Titiu. *"Privacy-Preserving Domain Name Service (DNS)"*. US Patent Application No. 16/949,587, Filed: 11.04.2020

Honours & Awards

Romanian National Olympiad in Informatics
Silver Medal & Honorable Mention (20^{th} place) *2008*

Romanian National Olympiad in Informatics
Honorable Mention (5^{th} place) *2006*

Areas of interest

- Artificial Intelligence, Computer Vision, Deep Learning, Unsupervised Learning