

Ciprian Adrian Corneanu

RESEARCHER IN ARTIFICIAL INTELLIGENCE

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Research interests: Deep Learning, Affective Computing, Artificial Intelligence, Cognitive Science

Education

Ph. D. in Machine Learning

UNIVERSITY OF BARCELONA

Barcelona, Spain

2015 - 2019[expected]

M.Sc. in Computer Vision

AUTONOMOUS UNIVERSITY OF BARCELONA

Barcelona, Spain

2014 - 2015

- Thesis: *Facial Expression Analysis of Neurologically Impaired Children*
- Subjects include: Optimization and Inference Techniques for Computer Vision, Machine Learning Techniques for Computer Vision, Video Analysis, Visual Recognition, 3D Vision.

B.S. in Telecommunications

TÉLÉCOM SUDPARIS

Paris, France

2009 - 2011

- Thesis: *Motion Estimation. Dealing with Covered and Uncovered Regions.*
- Part of a Double Degree agreement with The Technical University of Bucharest. Major in High Tech Imaging.
- Subjects include: Statistics, Object oriented programming, Multimedia indexation, Image, video & 3D graphics compression, Protection of digital content, Multimedia games.
- Projects include: Basic request by content image search engine, Simple 3D game with a built in hand gesture recognition interface, Image compression using dictionaries.

B.S. in Electronics, Telecommunications and Information Technology

TECHNICAL UNIVERSITY OF BUCHAREST

Bucharest, Romania

2006 - 2009

- *Subjects include:* Signals and systems, Digital signal processing, Digital integrated circuits, Information transmission theory, Micro-controllers.
- *Projects include:* Industrial project regarding signature recognition for Internet-banking.

Work Experience

Research Scholar

UNIVERSITY OF BARCELONA, COMPUTER VISION CENTER

Barcelona, Spain

Feb. 2015 -

- Research in improving automatic facial expression analysis using deep artificial neural networks.

Visiting Scholar

OHIO STATE UNIVERSITY

Columbus, OH, USA

Sep. 2018 - Mar. 2019

- Research in explainability of deep artificial neural networks.

Development Engineer

C.R.S. IIMOTION, A TEHNICOLOR SPIN-OFF

Freiburg/Villingen, Germany

Oct. 2011 - Sep. 2014

- Developing motion estimation algorithms for plasma TVs for LG Electronics. I traveled to the LGE Plasma R&D lab in Seoul, Korea for providing support in implementation. Since September 2012 I worked together with a medical instruments producer for developing algorithms for measuring optical properties of endoscopes.

Intern

C.R.S. IIMOTION, A TEHNICOLOR SPIN-OFF

Villingen, Germany

Feb. 2011 - Sep. 2014

- Internship on developing motion estimation techniques for plasma TVs frame conversion.

Publications

CONFERENCES

- *What Does It Mean to Learn in Deep Networks? And, How Does One Detect Adversarial Attacks?*. Ciprian Corneanu, Meysam Madadi, Sergio Escalera, Aleix Martinez. *Proceedings of the IEEE Conference on Computer Vision (CVPR)*, 2019
- *Deep structure inference network for facial action unit recognition*. Ciprian Corneanu, Meysam Madadi, Sergio Escalera. *Proceedings of the European Conference on Computer Vision (ECCV)*, 2018
- *Continuous Supervised Descent Method for Facial Landmark Localisation*. Marc Oliu Simon, Ciprian Corneanu, Laszlo Jeni, Jeffrey Cohn, Takeo Kanade. *Asian Conference on Computer Vision (ACCV)*, 2016
- Irani, R., Nasrollahi, K., Simon, M., Corneanu, C., Escalera, S., Bahnsen, C., ... & Petrini, L. (2015). *Spatiotemporal Analysis of RGB-DT Facial Images for Multimodal Pain Level Recognition*. In *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition Workshops (CVPRW)* (pp. 88-95).

JOURNALS

- *Automatic Recognition of Deceptive Facial Expressions of Emotion*. Ikechukwu Ofodile, Kaustubh Kulkarni, Ciprian Adrian Corneanu, Sergio Escalera, Xavier Baro, Sylwia Hyniewska, Juri Allik, Gholamreza Anbarjafari. *Transactions in Affective Computing (TAC)*, 2017.
- Corneanu, C. A., Oliu, M., Cohn, J. F., & Escalera, S. . *Survey on RGB, 3D, Thermal, and Multimodal Approaches for Facial Expression Recognition: History, Trends, and Affect-related Applications*. *Transactions in Pattern Analysis and Machine Intelligence (TPAMI)*, 2016
- Marc Oliu Simon, Ciprian Corneanu, Kamal Nasrollahi, Sergio Escalera Guerrero, Olegs Nikisins, Yunlian Sun, Haiqing Li, Zhenan Sun, Thomas B Moeslund, Modris Greitans. *Improved RGB-DT based face recognition*. *Int Biometrics* (2016).

Projects

Neurochild

2014 - 2016

Main Researcher: Dr. Sergio Escalera.

- Facial expression analysis for clinical rehabilitation of neurologically impaired patients in a gamification context. A project in collaboration with ICA, Institut Guttmann, Politecnica de Madrid.

Cynny

2014 - 2016

Main Researcher: Dr. Sergio Escalera

- Developing a package of computer vision modules for commercial use. The modules include scene and object recognition, facial expression analysis, age and gender detection. They were integrated in an innovative social network developed by a private company. A project in collaboration with Computer Vision Center (CVC).

xBadges

2015 - 2016

Main Researcher: Dr. Sergio Escalera

- Developing a system that is capable to identify, validate and certify abilities of video game players by using facial analysis technologies, and the OpenBadges technology (an online standard to recognize and verify learning).

Organization

ChaLearn Looking at People 2016 ECCV Workshop and Challenge

2016

Amsterdam, The Netherlands

ChaLearn Looking at People 2016 CVPR Workshop and Challenge

2016

Las Vegas, USA

Invited Talks

Introduction to Affective Computing and Facial Expression Analysis

2017-2018

AT DATA SCIENCE MSc PROGRAM

University of Barcelona, Spain

What does it mean to learn in Deep Neural Networks

2019

AT BCN-AI

Undergraduate Supervision

Anàlisi facial en entorns d'interacció home-màquina

2015

AITOR MORESO

- Co-supervised the final project for a Mathematics B.S. student, on the subject of face alignment. During this project a series of methods were tested by the student, evaluating and comparing its accuracy under different rotation and self-occlusion conditions.

Miscellaneous

HONOURS & AWARDS

- The paper *Continuous Supervised Descent Method for Facial Landmark Localisation*. Marc Oliu Simon, Ciprian Corneanu, Laszlo Jeni, Jeffrey Cohn, Takeo Kanade. *Asian Conference on Computer Vision, 2016* got accepted for an oral presentation. The acceptance rate for oral presentations at the Asian Conference of Compute Vision for the year 2014, was 3.9%.