Angel Noé Martínez-González

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Current Position: Computer Vision Scientist at Amazon, Berlin.

Work Experience

- **08.2021-** **Amazon, Berlin, Germany**. Applied Scientist - *Computer Vision & Deep Learning.*
- **08-11.2020** **Google, Zurich, Switzerland**. Research SWE Intern - *OCR/Mobile vision & Deep Learning.*
- **04-07.2020** **Amazon, Berlin, Germany**. Applied Science Intern - *Computer Vision & Deep Learning.*
- **2016-2021** **Idiap Research Institute, Martigny, Switzerland**. Research assistant - *Human pose estimation, Deep Learning & Machine Learning.*
- **2012, 2016** **Center for Research in Mathematics (CIMAT), México**. Research and Development Engineer - *Computer vision for 1) computer graphics and VR gaming, 2) image recognition, 3) Robocup 2012.*
- **2015** **Intel Corporation (Intel-GDC) México**. Software Engineer - *Android OS development.*
- **2014** **Laboratoire d'Analyse et d'Architecture des Systèmes (LAAS-CNRS), Toulouse, France**. Research internship - *Intelligent systems for video surveillance.*
- **2003-08** **National Institute for Adult Education (INEA), México**. Adult Education - *Tutoring sessions and direction of exams for adult certification of basic education.*

Education

11.16-07.21 **École Polytechnique Fédérale de Lausanne (EPFL), Switzerland**. PhD in Electrical Engineering. Thesis title: "Efficient Depth-based Deep Learning Methods for Multi-Party Pose Estimation". Thesis director: Dr. Jean-Marc Odobez.

2012-14 **Center for Research in Mathematics (CIMAT), México**. Master in Computer Science. Cumulative Grade Point Average: 92/100.

2007-12 **University of Guanajuato (DICIS), México**. Computer Systems Engineering. Cumulative Grade Point Average: 89/100. Specialization: Artificial Intelligence and Industrial Informatics.

Selected Publications

Resesarch interests: Human-computer interaction, video analysis, machine learning.

- **Pose Transformers: Human Motion Prediction with Non-Autoregressive Transformers**. Angel Martínez-González, Michael Villamizar and Jean-Marc. Odobez. *IEEE/CVF International Conference on Computer Vision (ICCV), 2021.*
- **An Efficient Image-to-Image Translation HourGlass-based Architecture for Object Pushing Policy Learning**. Marco Ewerton, Angel Martínez-González and Jean-Marc Odobez. *IEEE/RSJ International Conference on Intelligent Robots and Systems, 2021.*
- **Residual Pose: A Decoupled Approach for Depth-Based 3d Human Pose Estimation**. Angel Martinez-Gonzalez, Michael Villamizar, Olivier Canevet and Jean-Marc Odobez. *IEEE/IRSJ Int. Conf. on Intelligent Robots and Systems (IROS), 2020.*
- **WatchNet++: Efficient and Accurate Depth-Based Network for Detecting People Attacks and Intrusion**. Michael Villamizar, Angel Martínez-González, Olivier Canevet and Jean-Marc Odobez. *Springer Journal of Machine Vision and Application, (MVAP) 2020.*
- **Efficient Convolutional Neural Networks for Depth-Based Multi-Person Pose Estimation**. Angel Martinez-Gonzalez, Michael Villamizar, Olivier Canevet and Jean-Marc Odobez. *IEEE Transactions on Circuits and Systems for Video Technology (TCSVT), 2019.*
- **WatchNet: Efficient and Depth-based Network for People Detection in Video Surveillance Systems**. Michael Villamizar, Angel Martinez-Gonzalez, Olivier Canevet and Jean-Marc Odobez. *IEEE Int. Conf. on Advanced Video and Signal-Based Processing (AVSS), 2018.*

- **Investigating Domain Adaptation for Efficient Human Pose Estimation**. Angel Martinez-Gonzalez, Michael Villamizar, Olivier Canevet and Jean-Marc Odobez. *European Conference on Computer Vision - Workshops, (ECCV) 2018*.
- **Real-Time Convolutional Neural Networks for Depth-Based Human Pose Estimation**. Angel Martinez-Gonzalez, Michael Villamizar, Olivier Canevet and Jean-Marc Odobez. *IEEE/IRSJ Int. Conf. on Intelligent Robots and Systems (IROS), 2018*.
- **MSc. Thesis: "Motion-Based Camera-Network Topology Inference"**, using probabilistic graphical models, machine learning, and computer vision techniques in a visual surveillance framework. Thesis director: Dr. Jean-Bernard Hayet (CIMAT). Thesis co-director: Dr. Frédéric Lerasle (LAAS-CNRS). Year 2014.
- **Real-time Face Detection Using Neural Networks**. Angel N. Martinez-Gonzalez and Victor Ayala-Ramirez. *IEEE Mexican International Conference on Artificial Intelligence, (MICAI), 2011.*

Patents

- **Visual blending of content** (Patent No. US11416910B1), Issued: 08/2022 - Co-inventor.

Skills

- Development C/C++.
- Scripting: Python, Matlab, R.
- Operating systems: Windows (user), Linux (user).

Projects

- **ViZDoom with Reinforcement Learning**. Solving navigation tasks in a 3d FPS game environment for autonomous agents with deep reinforcement learning methods.
- **3d object culling methods for a virtual reality game**: Sophie's guardian GameCoder Studios, Mexico.
- **Algorithms Analysis and Design Group. Intel Corporation, (Intel-GDC) Mexico**. Informal speeches to cover some topics of algorithm design and analysis for the Intel community.
- **Multi-person visual tracking**. Center for Research in Mathematics (CIMAT), México. Development of a vision system able to track multiple people.
- **3d soccer ball tracking**. Ball tracking for the NAO robot for soccer playing in the Robocup soccer championship.

Awards and Grants

- Scholarship for MSc and PhD studies, National Council for Science and Technology (CONACyT), México, 2012,2016.
- 1st Place by Country University ranking, IEEExtreme programming competition, 2011.
- Academic excellence for the best student of the generation, University of Guanajuato, 2011.
- Outstanding performance student, Merit student award, University of Guanajuato, 2008, 2009, 2010.
- Member of the student committee, Engineering Division, University of Guanajuato, 2009, 2010.

Languages

Spanish: Mother tongue; **English**: Fluent; **French**: Intermediate; **German**: Basic.