

# Amanda Duarte

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## Education

- 2018–2022(expected) **Ph.D. candidate in Computer Science (Marie Sklodowska-Curie fellow)**,  
*Barcelona Supercomputing Center/Universitat Politècnica de Catalunya*, Barcelona, Spain.  
PhD thesis: Data and Methods for a Visual Understanding of Sign Languages
- 2015–2017 **Master's in Computer Engineering**,  
*Federal University of Rio Grande (FURG)*, Rio Grande, Brazil.  
Master's thesis: Dataset Generation for Computer Vision and Performance Analysis of Image Restoration Methods Applied to Underwater Environments.
- 2010–2014 **Bachelors Degree in Internet Systems Technology / Systems Analysis**,  
*Sul-rio-grandense Federal Institute of Education, Science and Technology*, Pelotas, Brazil.

## Scholarships and Awards

- 2018-2021 **Marie Sklodowska-Curie fellow** – INPhINIT Doctoral fellowship - "La Caixa" foundation.
- 2017 **Facebook/Caffe2 Research Award** - Facebook Research and Academic Program  
First author of the project proposal "Speech2Signs: Spoken to Sign Language Translation using Neural Networks". Winner of 1 out of 5 research award.
- 2015–2017 **National Agency of Petroleum, Natural Gas and Biofuels Scholarship** - Master thesis.
- 2013–2014 **Brazil Community College STEM Program** - Science without Border Scholarship.

## Research experience

- Jun – Nov 2021 **École des Ponts ParisTech / University of Cambridge**, *Visiting research student at the IMAGINE group under the supervision of Prof. Gül Varol and Prof. Samuel Albanie.*
- Feb – Jul 2019 **Carnegie Mellon University - CMU**, *Visiting research student at the Language Technologies Institute (LTI) under the supervision of Prof. Florian Metze.*
- Jun – Aug 2018 **Johns Hopkins University - Frederick Jelinek Memorial Summer Workshop (JSALT)**, *Six-week-long research program on Machine Learning for Speech, Language and Computer Vision Technology. Part of the Grounded Sequence to Sequence Transduction group.*  
[www.clsp.jhu.edu/workshops/18-workshop/grounded-sequence-sequence-transduction/](http://www.clsp.jhu.edu/workshops/18-workshop/grounded-sequence-sequence-transduction/)
- Sep 2017 – May 2018 **Barcelona Supercomputing Center (BSC)**, *Visiting researcher working on multi-modal video-audio retrieval under the supervision of Prof. Jordi Torres and Xavier Giro.*
- Jun 2017– Sep 2017 **Federal University of Rio Grande**, *Research Assistant*, Research and development on Computer Vision and Robotics.
- Fev 2015 – Jun 2017 **Grupo de Automação e Robótica Inteligente - Nautec, Universidade Federal do Rio Grande**,  
*Research and development in CNPq Brazilian project.*  
Netuno: Proposed a novel method for underwater images restoration – Proposed a new underwater image dataset – Development of a model-based participating media simulator.

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## Selected publications

A. Duarte, S. Albanie, X. Giro-i-Nieto, G. Varol. Sign Language Video Retrieval with Free-Form Textual Queries. *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2022.

A. Duarte, S. Palaskar, L. Ventura, D. Ghadiyaram, K. DeHaan, F. Metze, J. Torres, X. Giro-i-Nieto. How2Sign: A Large-scale Multimodal Dataset for Continuous American Sign Language. *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2021

L. Ventura, A. Duarte, X. Giro-i-Nieto. Can Everybody Sign Now? Exploring Sign Language Video Generation from 2D Poses. *Sign Language Recognition, Translation & Production (SLRTP) ECCV-Workshop*. August, 2020.

L. Specia, R. Arora, L. Barrault, O. Caglayan, A. Duarte, D. Elliott, ... , J. Libovicky. Grounded Sequence to Sequence Transduction. *In IEEE Journal of Selected Topics in Signal Processing*, 2020. (Impact Factor (IF): 4.9)

A. Duarte. Cross-modal Neural Sign Language Translation. *In 27th ACM International Conference on Multimedia - Doctoral Symposium*. October, 2019.

A. Duarte, et al. WAV2PIX: Speech-conditioned Face Generation Using Generative Adversarial Network. *In International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, 2019.

J. Gaya, A. Duarte, F. Codevilla, P. Drews, S. Botelho. Single Image Restoration for Participating Media Based on Prior Fusion. *In IEEE computer graphics and applications*, 2019. (IF: 1.6)

A. Duarte, G. Camli, J. Torres, X. Giro-i-Nieto. Towards Speech to Sign Language Translation. *In European Conference on Computer Vision (ECCV) Workshop on Shortcomings in Vision and Language (SiVL)*, 2018.

D. Surís, A. Duarte, A. Salvador, J. Torres, X. Giró-i-Nieto. Cross-modal embeddings for video and audio retrieval. *In ECCV workshop*, 2018.

J. Gaya, L. Gonçalves, A. Duarte, B. Zanchetta, P. Drews, S. Botelho. Vision-based obstacle avoidance using deep learning. *In Latin American Robotics Symposium (LARS)*, 2016.

A. Duarte, G. Zaffari, R. Rosa, L. Longaray, P. Drews, S. Botelho. Towards comparison of underwater SLAM methods: An open dataset collection. *In IEEE OCEANS 2016-Shanghai*, 2016.

A. Duarte, F. Codevilla, J. Gaya, S. Botelho. A dataset to evaluate underwater image restoration methods. *In IEEE OCEANS 2016-Shanghai*, 2016.

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## Research interests

Data collection and curation, computer vision, human pose estimation, automatic sign language understanding, multi-modal learning.

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## Open-source projects and datasets

**Speech2Signs** Lead researcher and main developer of the project that aims to automatically translate spoken language (e.g English) into American Sign Language. (More info available at: [goo.gl/h7e7Yb](http://goo.gl/h7e7Yb)).

### Datasets

**How2Sign Dataset** Lead researcher and creator of a large-scale multimodal dataset for continuous American Sign Language. (Available at: <https://how2sign.github.io/>)

**TURBID** Lead researcher and creator of a dataset for underwater image restoration. (Available at: **Dataset** <http://amandaduarte.com.br/turbid>)

Open-source Contribute to a number of open-source projects, including:

- repos
  - o **Wav2Pix** - <https://github.com/imatge-upc/wav2pix/>
  - o **nmtpytorch** - <https://github.com/lium-lst/nmtpytorch/>
  - o **speech2signs-nmt** - <https://github.com/imatge-upc/speech2signs-2017-nmt/>

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## Grants

Jun 2021 **Women in Computer Vision (WiCV) Workshop 2021** Travel grant award.

Winter 2019 **Severo Ochoa outgoing Mobility Grant** - Barcelona Supercomputing Center.

Oct 2019 **SIGMM ACM Multimedia** Travel Grant award.

Sept 2018 **Women in Computer Vision (WiCV) Workshop 2018** Travel grant award.

Dec 2017 **Women in Machine Learning (WiML) Workshop 2017** Travel grant award.

Sep 2017 **Severo Ochoa incoming Mobility Grant** - Barcelona Supercomputing Center.

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## Community Service

Organizer LatinX in AI @ NeurIPS'21

Reviewer ECCV'22, CVPR'22, ICCV'21, ACM MM(2020, 2021), MTSUMMIT'21, WICV-CVPR(2018, 2019, 2020, 2021, 2022), CV4A'20, CV4GC'19, ICASSP'19, WiCV-ECCV'18, IEEE Transactions on Multimedia.

Volunteer ACM MM'19, NeurIPS'17, ECCV'16, ICCV'15

PC The How2 Challenge - ICML'19

### Awards

ICCV'21 - Outstanding Reviewer

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## Teaching experience

Winter 2022 **Master Course in Artificial Intelligence with Deep Learning**, *Teaching staff*, School of Professional & Executive Development - UPC, Barcelona, Spain.

<https://www.talent.upc.edu/esp/estudis/formacio/curs/311002/posgrado-artificial-intelligence-deep-learning/>

Winter 2021 **Master Course in Artificial Intelligence with Deep Learning**, *Teaching staff*, School of Professional & Executive Development - UPC, Barcelona, Spain.

Winter 2020 **Master Course in Artificial Intelligence with Deep Learning**, *Teaching staff*, School of Professional & Executive Development - UPC, Barcelona, Spain.

[www.talent.upc.edu/ing/estudis/formacio/curs/310401/postgraduate-course-artificial-intelligence-deep-learning/](http://www.talent.upc.edu/ing/estudis/formacio/curs/310401/postgraduate-course-artificial-intelligence-deep-learning/)

Spring 2020 **Master Course in Artificial Intelligence with Deep Learning**, *Teaching staff*, School of Professional & Executive Development - UPC, Barcelona, Spain.

[www.talent.upc.edu/ing/estudis/formacio/curs/310400/postgraduate-course-artificial-intelligence-deep-learning/](http://www.talent.upc.edu/ing/estudis/formacio/curs/310400/postgraduate-course-artificial-intelligence-deep-learning/)

Autumn 2018 **Deep Learning for Artificial Intelligence**, *Teaching assistant*, Master Course at ETSETB TelecomBCN - Universitat Politècnica de Catalunya, Barcelona, Spain.

<https://telecombcn-dl.github.io/2018-dlai/>

Autumn 2017 **Deep Learning for Artificial Intelligence**, *Teaching assistant*, Master Course at ETSETB TelecomBCN - Universitat Politècnica de Catalunya, Barcelona, Spain.  
<https://telecombcn-dl.github.io/2017-dlai/>

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## Student Supervision and Mentoring Experience

### Universitat Politècnica de Catalunya - UPC

- 2021 **Laia Tarres**, *MsC, co-supervised with Xavier Giró-i-Nieto*.
- 2020 **Lucas Ventura**, *MsC, co-supervised with Xavier Giró-i-Nieto*.
- 2020 **Peter Muschick**, *MsC, co-supervised with Xavier Giró-i-Nieto*,  
Thesis title: Sign Language Recognition and Translation using Human Keypoints and Transformer Model.
- 2020 **Pol Perez Granero**, *Bs, co-supervised with Xavier Giró and Kevin McGuinness*,  
Thesis title: 2D to 3D body pose estimation for sign language with Deep Learning.
- 2019 **Miquel Tubau**, *Ms, co-supervised with Xavier Giró-i-Nieto and Luis Antonio Belanche Muñoz*,  
Thesis title: Enhancement and evaluation of a speech-conditioned image generator.
- 2018 **Janna Ecur**, *Bs, co-advise with Xavier Giró-i-Nieto, Marta Ruiz Costa-Jussa*,  
Bs thesis title: Exploring Automatic Speech Recognition with TensorFlow.
- 2018 **Sandra Roca**, *Bs, co-advise with Xavier Giró-i-Nieto*,  
Thesis title: Block-based Speech-to-Speech Translation.
- 2017 **Gorkem Camli**, *Bs, co-advise with Xavier Giró-i-Nieto*.

### School of Professional Executive Development - UPC

- 2021 **Khoury Boutrous, Oscar Calaf, Jeannette Hernandez, Jose Olivert**,  
Ms final project: Human Video Activity Classification. <https://github.com/oscarcalafgmailcom/aidl2021-aidl2021-human-video-activity-classification>.
- 2021 **Enrique González Terceño, Sofia Limon, Gerard Pons and Celia Santos**,  
Ms final project: Device control using gestures. [https://github.com/gesturesAidl/video\\_processor](https://github.com/gesturesAidl/video_processor).
- 2020 **Abel Bernabeu, Albert Forgas, Calebe Monteiro, David Garcia**,  
Ms final project: Using autoencoders to compress and restore facial images <https://github.com/abel-bernabeu/autoencoder>.
- 2020 **Eloi Marimon Rollant, Quim Suazo Beneit, Magdalena Sztandarska, Daniel Garcia Tello**,  
Ms final project: Transformer Neural Sign Language Translation [https://github.com/eloi-jamao/Sign\\_Transformer](https://github.com/eloi-jamao/Sign_Transformer).

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## Programming skills

Programming Python, PHP, HTML, CSS, familiar with Matlab and SQL.

DL libraries PyTorch, Keras, familiar with Tensorflow.

Other L<sup>A</sup>T<sub>E</sub>X, OpenCV, Adobe Photoshop, Adobe Lightroom.

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## Languages

Portuguese Native

English Fluent

Spanish Intermediate

Catalan Beginner