

Research Interests

Artificial intelligence, machine learning, deep learning, computer vision, multimodal learning, understanding neural networks, visual reasoning.

Education

- 2014–Present **PhD in Computer Science**, *Massachusetts Institute of Technology*, Cambridge, MA.
◦ Advisor: Antonio Torralba
- 2014–2016 **MSc in Computer Science**, *Massachusetts Institute of Technology*, Cambridge, MA, GPA: 4.0/4.0.
◦ Thesis title: *Where are they looking?*
◦ Advisor: Antonio Torralba
- 2008–2014 **Degree in Interdisciplinary Engineering**, *BarcelonaTech Interdisciplinary Higher Education Center (CFIS)*, Barcelona, Spain.
- 2008–2014 **Engineer's degree in Telecommunications Engineering**, *BarcelonaTech School of Telecommunications Engineering (ETSETB)*, Barcelona, Spain, GPA: 8.86/10. Ranked third in the class out of 152 students.
◦ Thesis title: *Object detection and recognition: from saliency prediction to one-shot trained detectors*
◦ Thesis advisor: Antonio Torralba
- 2008–2013 **Degree in Mathematics**, *BarcelonaTech School of Mathematics and Statistics (FME)*, Barcelona, Spain, GPA: 8.78/10. Valedictorian: ranked first in the class out of 34 students.
- 2006–2008 **Spanish Baccalaureate (high school equivalent) – Technology Specialization**, *Súnon Escola d'ESO i Batxillerat*, Barcelona, GPA: 9.1/10.
Graduated with honors.

Refereed Publications

- [8] Harwath, David, **Adrià Recasens**, Didac Suris, Galen Chuang, Antonio Torralba, and James Glass. “Jointly Discovering Visual Objects and Spoken Words from Raw Sensory Input”. In: *Proceedings of the European Conference on Computer Vision (ECCV)*. 2018. **[Oral Presentation]**.
- [7] **Recasens***, **Adrià**, Petr Kellnhofer*, Simon Stent, Wojciech Matusik, and Antonio Torralba. “Learning to Zoom: a Saliency-Based Sampling Layer for Neural Networks”. In: *Proceedings of the European Conference on Computer Vision (ECCV)*. 2018.
- [6] **Recasens**, **Adrià**, Carl Vondrick, Aditya Khosla, and Antonio Torralba. “Following Gaze in Video”. In: *Computer Vision (ICCV), 2017 IEEE International Conference on*. IEEE. 2017, pp. 1444–1452.
- [5] Kosti, Ronak, Jose M Alvarez, **Adrià Recasens**, and Agata Lapedriza. “Emotion recognition in context”. In: *The IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. 2017.
- [4] Bylinskii, Zoya, **Adrià Recasens**, Ali Borji, Aude Oliva, Antonio Torralba, and Frédo Durand. “Where should saliency models look next?” In: *European Conference on Computer Vision*. Springer. 2016, pp. 809–824.
- [3] **Recasens***, **Adrià**, Aditya Khosla*, Carl Vondrick, and Antonio Torralba. “Where are they looking?” In: *Advances in Neural Information Processing Systems (NIPS)*. 2015. **[Spotlight Presentation]**.
- [2] Kotsopoulos, Sotirios D, Federico Casalegno, **Adrià Recasens**, and Wesley Graybill. “Developing a RESTful communication protocol and an energy optimization algorithm for a connected sustainable home”. In: *First International Conference on IoT in Urban Space*. 2014. **[Oral Presentation, nominated to best paper award]**.
- [1] **Recasens**, **Adrià** and Ariadna Quattoni. “Spectral Learning of Sequence Taggers over Continuous Sequences”. In: *Proceedings of the European Conference on Machine Learning and Knowledge Discovery in Databases-Volume 8188*. Springer-Verlag New York, Inc. 2013. **[Oral Presentation]**.

Workshops, Abstracts and Non-Refereed Publications

- [4] Madan, Spandan, Zoya Bylinskii, Matthew Tancik, **Adrià Recasens**, Kimberli Zhong, Sami Alsheikh, Hanspeter Pfister, Aude Oliva, and Fredo Durand. “Synthetically Trained Icon Proposals for Parsing and Summarizing Infographics”. In: *arXiv preprint arXiv:1807.10441* (2018).

- [3] Bylinskii, Zoya, Sami Alsheikh, Spandan Madan, **Adrià Recasens**, Kimberli Zhong, Hanspeter Pfister, Fredo Durand, and Aude Oliva. "Understanding infographics through textual and visual tag prediction". In: *arXiv preprint arXiv:1709.09215* (2017).
- [2] Kosti, Ronak, Jose Alvarez, **Adrià Recasens**, and Agata Lapedriza. "EMOTIC: Emotions in Context Dataset". In: *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition Workshops* (2017), pp. 61–69.
- [1] **Recasens, Adrià**, Zoya Bylinskii, Ali Borji, Fredo Durand, Antonio Torralba, and Aude Oliva. "Towards cognitive saliency: narrowing the gap to human performance". In: *Journal of Vision* 17.10 (2017), pp. 542–542.

Research Experience

- 09/2014–
Present **Graduate Research Assistant**, *Computer Science and Artificial Intelligence Laboratory of the Massachusetts Institute of Technology*, Cambridge, MA, USA.
Research on gaze-following, multimodal learning, saliency, attention, understanding neural networks and concept discovery under the supervision of Professor Antonio Torralba.
- 03/2017–
11/2017 **Research Contractor**, *Microsoft Research*.
Research on deep learning applied to land cover mapping under the supervision of Nebojsa Jojic.
- 06/2015–
09/2015 **Summer Research Intern**, *Microsoft Research*, Redmond, WA, USA.
Research on artificial intelligence applied to social network environments under the supervision of Nebojsa Jojic.
- 11/2013–
08/2014 **Visiting Research Assistant**, *Computer Science and Artificial Intelligence Laboratory of the Massachusetts Institute of Technology*, Cambridge, MA, USA.
Research on one-shot trained object detectors and saliency prediction under the supervision of Professor Antonio Torralba.
- 10/2013–
08/2014 **Collaborator**, *BarcelonaTech*, Barcelona, Spain.
Collaborator on the project Android Beyond the Stratosphere, recipient of the 2013 Google Research Award, under the supervision of Professor Eduard Alarcon and Elisenda Bou. Contributing to the integration of Android-Arduino in nanosatellites.
- 08/2012–
08/2014 **Collaborator**, *Mobile Experience Laboratory of the Massachusetts Institute of Technology*, Cambridge, MA, USA.
Design and implementation of a communication protocol under the framework of the Web of Things for the Sustainable Connected Home under the supervision of Professor Federico Casalegno.
- 02/2012–
09/2013 **Research Assistant**, *Laboratory for Relational Algorithmics, Complexity and Learning (LARCA)*. *BarcelonaTech Department of Software.*, Barcelona, Spain.
Working in algorithms for non-deterministic automatas based in spectral methods under the supervision of A. Quattoni.
- 06/2012–
08/2012 **Visiting Research Assistant**, *Mobile Experience Laboratory of the Massachusetts Institute of Technology*, Cambridge, MA, USA.
Design and implementation of a communication protocol under the framework of the Web of the Things for the Sustainable Connected Home under the supervision of Professor Federico Casalegno.
- 06/2011–
08/2011 **Visiting Research Assistant**, *Mobile Experience Laboratory of the Massachusetts Institute of Technology*, Cambridge, MA, USA.
Design of a monitoring and estimation system for the appliances of the Sustainable Connected Home under the supervision of Professor Federico Casalegno.

Teaching Experience

- 09/2016–
12/2016 **Teaching Assistant**, *Massachusetts Institute of Technology*.
Advances in Computer Vision (6.869)

Talks

- 07/2018 **Learning to Zoom: a Saliency-Based Sampling Layer for Neural Networks**, *Element AI*, Montreal, Canada.
- 05/2018 **Where are they looking?**, *Montreal Institute for Learning Algorithms (MILA)*, Montreal, Canada.
- 12/2017 **Gaze360: Gaze-following from everywhere**, *UPC TelecomBCN*, Barcelona, Spain.
- 06/2017 **Learning to learn: present and future of computer vision**, *Cetaqua*, Barcelona, Spain.
- 12/2016 **Where are they looking?**, *UPC TelecomBCN*, Barcelona, Spain.
- 12/2015 **Where are they looking?**, *Universitat Oberta de Catalunya*, Barcelona, Spain.
- 12/2015 **Where are they looking?**, *Neural Information And Processing Systems, 2015*, Montreal, Canada.

- 10/2014 **Developing a RESTful communication protocol and an energy optimization algorithm for a connected sustainable home**, *International Conference on IoT in Urban Space 2014*, Remote (Rome, Italy).
- 09/2013 **Spectral Learning of Sequence Taggers Over Continuous Sequences**, *European Conference of Machine Learning 2013*, Prague, Czech Republic.
- 02/2013 **Solving Problems**, *TEDxYouth@Barcelona*, Barcelona, Spain.

Academic Service

- Reviewer**, *Asian Conference on Computer Vision*.
- Reviewer**, *European Conference on Computer Vision*.
- Reviewer**, *Computer Vision and Pattern Recognition*.
- Reviewer**, *IEEE Transactions on Image Processing*.
- Reviewer**, *Journal of Electronic Imaging*.
- Reviewer**, *IET Information Security*.

Students Supervised

- 02/2018– Present **Didac Suris**, *Visiting Master Student, MIT*.
Multimodal concept discovery.
- 10/2017– 05/2018 **Michael Silver**, *Undergraduate Student, MIT*.
Gaze-following in movies.
- 02/2017– 11/2017 **Spandan Madan**, *Master Student, Harvard*.
Understanding infographics through textual and visual tag prediction.
- 02/2017– 06/2017 **Sami Alsheikh**, *Master Student, MIT*.
Understanding infographics through textual and visual tag prediction.

Awards and Fellowships

- 2014 **Third best student award**, *2014 BarcelonaTech graduating class, Engineer's degree in Telecommunications Engineering*.
- 2014 **Best paper award nomination**, *for the paper Developing a RESTful communication protocol and an energy optimization algorithm for a connected sustainable home at Urb-IoT 2014*.
- 2013 **La Caixa Fellow**, *full funding for two years of doctoral program*.
- 2013 **Formula Santander Fellow**, *partial funding of year-long stay for master's thesis*.
- 2013 **CFIS PFC Fellow**, *partial funding for a one year's master thesis stay*.
- 2013 **Valedictorian**, *2013 BarcelonaTech graduating class, Degree in Mathematics*.
- 2008-2013 **CFIS Fellow**, *five-year, full funding for Degree in Engineering and Degree in Mathematics at Barcelona Tech*.
- 2011-2012 **CFIS Altres Fellow**, *partial funding for two summer internships at the Massachusetts Institute of Technology, Summer of 2011 and 2012*.
- 2012 **Best Student Award**, *initial cycle of the Degree in Telecommunications Engineering and Degree in Mathematics*.
- 2008 **Silver Medal**, *Physics Olympiad of Spain*.
- 2008 **Silver Medal**, *Physics Olympiad of Catalonia*.

Languages

- Catalan **Native Speaker**
- Spanish **Native Speaker**
- English **Full Professional Proficiency**

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Technology

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|---------|--------------|------------|--------------|
| Pytorch | advanced | Torch | advanced |
| Caffe | advanced | TensorFlow | advanced |
| C/C++ | advanced | MATLAB | advanced |
| Java | intermediate | Maple | beginner |
| Python | advanced | LISP | beginner |
| HTML | intermediate | CSS | intermediate |