

BENET ORIOL SÀBAT

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ABOUT ME

As a PhD student in Computer Science, I am interested in various aspects of machine learning and artificial intelligence with a focus on computer vision. Through research and industry internships, I've gained experience in a wide range of applications of deep learning, such as multimodal classification and representation learning, automatic speech recognition, text-to-speech, and genomics.

EDUCATION

PhD, Computer Science - University of California, Los Angeles 2022 - (2026)

MSc, Telecommunications Engineering - Universitat Politècnica de Catalunya 2019 - 2021
Computer vision, speech processing, machine learning.

BSc, Telecommunications Engineering - Universitat Politècnica de Catalunya 2015 - 2019
Digital signal processing, audiovisual signal processing, information theory.
Award: Best 6th (2%) student of the first year.

SKILLS

Languages Python, Bash, Matlab, C++, Javascript.
Frameworks Pytorch, Numpy, OpenCV, Scikit-learn, Matplotlib.
Other Linux, Git, Github.

EXPERIENCE

Research Assistant Nov 2021 - Aug 2022
Stanford University

- Built a local ancestry inference model for large genomic datasets that is orders of magnitude faster and lighter than previous methods, while preserving accuracy. [1] ECCB 2022 ([Oral presentation](#)).
- Developed transformer-based representation learning models for genomic and health data.

Applied Science Intern Jun 2021 - Oct 2021
Amazon Cambridge, UK

- Research on text-to-speech synthesis for highly expressive reading for Alexa.
- Training and evaluation of TTS models.

Research Intern Jun 2021 - Oct 2021
Institut de Robotica Industrial Barcelona

- Deep Learning approach for automatic American Sign Language generation.
- Automatic extraction of soft labels for hand pose estimation and data analysis and pre-processing.

Research Intern May 2019 - April 2020
Telefonica Barcelona

- Transcription-Enriched Joint Embeddings for Spoken Descriptions of Images and Videos.[3] CVPR 2020 EPIC Workshop.
- Assisted in building Automatic Speech Recognition systems for Telefonica's home assistant *Aura*.
- Built a text correction system to improve Telefonica Aura's movie recommendation chatbot *Botcorn*.

OTHER PROJECTS

- BSc Thesis: Hate speech in pixels: Detection of offensive memes towards automatic moderation. NeurIPS 2019 AI for Social Good Workshop (Oral Talk) [2]
- Collaboration with Doctors Without Borders: Tent detection for estimation of refugee camp population using CNNs on satellite images. [Code](#).
- DesnowUNet: Removing snow particles from images using UNet and image formation priors.
- Python implementation of the "2048" game and training of RL game agent.
- Cellular network anomaly prediction: [Kaggle winner](#).

PUBLICATIONS

- [1] **Benet Oriol Sabat**, Daniel Mas Montserrat, Xavier Giro-i-Nieto, Alexander G Ioannidis. "SALAI-Net: species-agnostic local ancestry inference network." *Bioinformatics*, Volume 38, Issue Supplement 2, September 2022, Pages ii27–ii33, doi.org/10.1093/bioinformatics/btac464.
- [2] **Benet Oriol Sabat**, Cristian Canton Ferrer, and Xavier Giro-i-Nieto. "Hate speech in pixels: Detection of offensive memes towards automatic moderation." arXiv preprint arXiv:1910.02334 (2019); NeurIPS 2019 AI for Social Good Workshop.
- [3] **Benet Oriol Sabat**, Jordi Luque, Ferran Diego, and Xavier Giro-i-Nieto. "Transcription-Enriched Joint Embeddings for Spoken Descriptions of Images and Videos." arXiv preprint arXiv:2006.00785 (2020); CVPR 2020 EPIC Workshop.
- [4] **Benet Oriol Sabat**. "The Learning Agent Triangle: Towards a Unified Disambiguation of the AGI Challenge." In *Artificial General Intelligence: 15th International Conference, AGI 2022, Seattle, WA, USA, August 19–22, 2022, Proceedings*, pp. 315–320. Cham: Springer International Publishing, 2023.

OTHER ACTIVITIES

- Teaching assistant for *Deep Learning for Computer Vision* seminar at UPC.
- Organizer of Telecogresca music festival and Engresca't music contest.

LANGUAGES

Catalan	Native.
Spanish	Native.
English	Advanced - C1 certified.
German	Elementary - A2 certified.