Nicolas Carrasco

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About me

Advanced Computer Science student at the University of Buenos Aires (UBA) with research experience at ICC (UBA-CONICET). Published researcher in computer vision methods. Hands-on background in data analysis and data processing; including the development of supervised learning models and evaluation pipelines. Seeking entry-level roles in Data Science, AI Engineer or similar.

Education

University of Buenos Aires, Bsc+Msc in Computer Science – Buenos Aires, Argentina Aug 2021 – present

- Relevant coursework: Machine Learning, Image Synthesis and Processing, Computer Organization and Architecture, Algorithms and Data Structures, Linear Algebra, Software Engineering.

Experience

Research Assistant, Institute of Computer Science (UBA-CONICET) – Buenos Aires, Argentina Sept 2025 – present

- Research and development of high-frequency event-based eye-tracking system.
- Designed a blink-detection algorithm based on event-stream activity analysis.
- Implemented and benchmarked computer vision models, including CNN, SNN and foundational models such as SAM3 (Segment Anything Model) for pupil detection.
- Co-authored a scientific paper accepted at the *55th Jornadas Argentinas de Informática (JAIIO 2026)*.

Projects

Synthetic Faces Classifier Oct 2025

- Trained a binary image classifier to distinguish AI-generated from real facial images using VGG-16 fine-tuned in PyTorch on a balanced dataset of 140,000 images (70k real, 70k synthetic).
- Achieved an F1 score of 0.97 on the held-out test set; designed the full ML pipeline including data loading, augmentation, training loop, and evaluation.

Supervised Learning for Cancer Prognosis Prediction Sept 2025

- Exploratory data analysis revealed class imbalance, motivating a custom stratified data split and stratified 5-fold cross-validation to preserve class proportions across all sets.
- Benchmarked 5 scikit-learn classifiers (Decision Tree, KNN, SVM, LDA, Naive Bayes) and performed hyperparameter optimization with Random Search.
- Evaluated models across 3 metrics (AUROC, AUPRC, accuracy) with per-fold, global, and averaged scoring; selecting SVM based on performance criteria and clinical requirements to reduce false negatives.

Publications

High-frequency event-based Eye Tracking July 2026

Designed a blink-detection algorithm via event activity analysis. Developed a high-frequency hybrid eye tracking method combining event streams and standard images.
Nicolas Carrasco, Nicolas Mastropasqua, Daniel Acevedo, (55th Jornadas Argentinas de Informática, 2026)

Technical Skills

Programming languages: Python, C++, C, SQL, HTML, CSS

ML / AI Frameworks: PyTorch, TensorFlow, Scikit-learn, OpenCV, Scikit-image, SciPy

Data & Analysis: NumPy, Pandas, data preprocessing, feature engineering, model evaluation

Tools & Platforms: Git, Docker, OpenAPI / Swagger, Linux

Areas of expertise: Machine learning, computer vision, deep learning, data science, data analysis, image processing, CNNs, image segmentation, pattern recognition, supervised learning, deep learning.

Languages: Spanish (native), English (fluent, B2)