Candela Castillo

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About Me

As a fourth-year student in Artificial Intelligence Engineering, I am passionate about applying my academic knowledge in real-world settings. I have a strong foundation in AI, Machine Learning, and Deep Learning, enabling me to effectively contribute to software and research projects. I am committed to continuous learning and eager to take on new challenges. I am currently seeking an internship opportunity to apply and strengthen my skills in a practical environment.

Education

University of San Andrés — *Buenos Aires, Argentina*
Bachelor of Engineering in Artificial Intelligence — *February 2022 – Present*
Expected Graduation 2026

- 90% Scholarship: Argentine Flag Bearers Scholarship
- **Relevant courses:** Natural Language Processing, Networks and Communication, Principles of Autonomous Robotics, Software Engineering, Databases, Computer Architecture and Operating Systems, Computer Vision, System Dynamics, Machine Learning and Deep Learning, Algorithms and Data Structures, Inference and Estimation, Mathematical Analysis I, II and III, Probability and Statistics Foundations, Numerical Methods and Optimization, Computational Thinking, Discrete Mathematics, Physics I and II, Linear Algebra
- Elective course: Neuroanatomy and Neurophysiology

A.M.E.N. Baptist School — *Neuquén, Argentina*
High School Diploma with focus on Computer Science — *Graduated 2020*

- GPA: 9.54/10 (approx. 3.82 in 4.0 scale)
- **Relevant courses:** Programming I and II, Data Processing I and II, Programming Specialty Practice
- 2nd Place - High School Programming Olympics, Faculty of Informatics, National University of Comahue.

Experience

Research Assistant — *Buenos Aires, Argentina*
University of San Andrés, AI and Robotics Laboratory (LINAR) — *February 2025 - Present*

- Collaborated on an interdisciplinary research project alongside the GEPI Group (IFAB, INTA-CONICET), focused on automated insect monitoring in forest ecosystems.
- Worked closely with researchers in applied ecology and artificial intelligence, facilitating integration of computer vision models in real biological contexts.
- Created technical logs, performance reports, and experimental documentation to promote traceability and reproducibility.
- Actively participated in team meetings, fostering critical thinking, collaborative problem-solving, and cross-disciplinary learning.

Admissions Assistant — *Buenos Aires, Argentina*
University of San Andrés, Undergraduate Admissions — *February 2024 - December 2024*

- Participated in coordinating institutional events such as the UdeSA Open Day, which engaged over 900 participants, applying organizational skills and teamwork in multidisciplinary environments.
- Utilized data analysis tools (advanced Excel, data cleaning) to optimize applicant tracking.
- Managed and updated databases in Excel, improving internal processes efficiency through automation.
- Conducted university guided tours, strengthening interpersonal skills and ability to communicate with diverse audiences, including non-technical profiles.

Projects

Biomedical Research Assistant with RAG for Neurodegenerative Lysosomal Diseases *2025*

- Collected and preprocessed scientific papers from Sci-Hub, performing structured chunking by sections to enhance retrieval granularity.
- Used BioBERT to generate semantic embeddings stored in an open-source vector store (FAISS).
- Orchestrated the full pipeline with LangChain, integrating a verification agent and a GPT-4 (o4) model deployed on Azure for response generation and clinical parameter comparison.
- Evaluated the system with datasets such as BioASQ and SciFact, applying metrics like NDCG, Recall@k, and Needle-in-a-Haystack test.

Automated Monitoring of Social Insects with YOLOv11 and ByteTrack *2025*

- Implemented a real-time wasp detection and tracking system using YOLOv11, achieving a global accuracy of 96.32%, and ByteTrack.
- Retrained YOLOv11 models with a custom dataset labeled in Roboflow, incorporating visual augmentation techniques such as mosaic, CLAHE, and Otsu thresholding via the Albumentations library.
- Diagnosed common model errors, creating internal validation tools and reports for collaboration with animal behavior specialists.

Speech Emotion Recognition *2024*

- Developed a speech emotion recognition system using Machine Learning techniques on the RAVDESS dataset.
- Implemented and evaluated classification models including Random Forest, LSTM, Autoencoder+LSTM, and CNN, using data augmentation (SMOTE) and stratified cross-validation (Group K-Fold).
- Applied feature engineering using the eGeMAPS set to capture relevant acoustic features such as fundamental frequency, energy, and spectrum.
- Trained a convolutional neural network with Mel spectrograms.

Skills

Languages: Native Spanish, Advanced English (C1 CEFR, First Certificate in English, University of Cambridge, 2018)

Programming Languages: Python, Java, C, C++, SQL, Haskell, Assembly

Libraries/Frameworks: scikit-learn, PyTorch, TensorFlow, Keras, Hugging Face Transformers, BERT, GPT, Pandas, NumPy, SciPy, Matplotlib, Seaborn, OpenCV, Ultralytics, YOLO, Librosa, OpenSMILE, Wav2Vec

Technologies/Tools: Git, GitHub, Docker, Conda, Jupyter Notebooks, Google Colab, VS Code, PyCharm, Bash, Makefile, Google Cloud Platform, Azure ML, PostgreSQL, MySQL, MongoDB, Neo4j, Roboflow, LaTeX