Israfel Salazar

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EDUCATION

UNIVERSITY OF COPENHAGEN
PhD in Multimodal Machine Learning
July 2024 - Present

ÉCOLE NORMALE SUPÉRIEURE (ENS)
MSc Applied Mathematics (MVA)
Oct 2022 - Oct 2023
Cum. Grade 16.26/20 (GPA 4.0)

UNIVERSITY PARIS-SACLAY
MSc Electrical Engineering, Machine Vision and AI
June 2020 - June 2022
Cum. Grade: 15.4/20 (GPA 3.7)
Best student of the major

UNIVERSITY OF CHILE
Mechanical Engineer (Engineering Diploma)
Completed June 2018
Cum. Grade: 6.2/7.0 (GPA 3.7)
Years of studies: 6

COURSEWORK

Probability and Statistics
Convex Optimization
Algorithms and Data Structures
Computational Statistics
Information Theory
3D Computer Vision
Deep Reinforcement Learning
Image and Video Processing
Generative Models
Natural Language Processing and Speech
- Speech-to-Text Adversarial Robustness

CS232N CNNs for Visual Recognition
- Assignments

SKILLS

PROGRAMMING
Advanced:
Python • Pytorch • Pandas • Scikit-Learn
HuggingFace • GIT
Intermediate:
Tensorflow • SQL • Java • C++
Familiar:
R • ROS • CSS/HTML • VHDL • THREE.js

LANGUAGE
Spanish: Native
English: Fluent (C2)
French: Excellent command (C1)

EXPERIENCE

DXO LABS | Research Engineer Internship
April 2023 – Nov 2023
- Developed a versatile codebase to create and evaluate different Diffusion architectures.
- Designed architecture and sampling technique, achieving state-of-the-art results in image deblurring and super sharpness.

LXMLS INSTITUTO SUPERIOR TÉCNICO | Core Monitor
Jun 2023
- Designed Transformer-Day exercises with cross-attention and multihead self-attention modules, providing easy-to-code and test implementations along with clear explanations.
- Provided guidance to students during coding lab sessions.

HUGGING FACE | ML Researcher & Collaborator
June 2022 – Dec 2022
- Research project under the guidance of @Douwe Kiela and @Amanpreet Singh.
- Tested a unified approach to multimodal machine learning by processing text as images.
- Developed a pipeline for augmenting datasets modalities using generative models.
- Trained FLAVA to study performance impact of augmented multimodal datasets.

EXCELERATE | Software Engineering Intern
July 2021 – Sept 2021 | Copenhagen, Denmark
- Built a pipeline that fetched and summarized descriptions of university courses.
- Developed a scraper to obtain course descriptions and designed database to store them.
- Integrated a large language model to summarize the coursework experience of a student.

MUNDOS VIRTUALES | Robotics Engineer
April 2018 – Nov 2019 | Santiago, Chile
- Developed scripts for robotic arms involving decision-making and integration.
- Researched and manufactured state-of-the-art soft robotics for handling objects.
- Created a dataset to fine-tune a YOLO architecture for detecting ripe fruits.
- Simulated and modeled robotic arms using 3D environments for fruit harvesting.

RESEARCH PROJECTS

Long Story Short? Disentangling Compositionality and Long-Caption Understanding in VLMs
Under Review
- Curated an evaluation suite covering compositionality, long captions, and generalization.
- Conducted large-scale evaluation and fine-tuning of CLIP on long-caption datasets.
- Identified a bidirectional link between compositional and long-caption capabilities, improving retrieval performance.

Kaleidoscope: In-language Exams for Multilingual Vision Evaluation
Under Review | Collaboration with Cohere
- Built a multilingual VL-benchmark covering 10+ languages for in-language evaluation.
- Evaluated cross-lingual, multimodal, and culturally grounded reasoning in VLMs.

Specificity-Enhanced CLIP-Score for Long Image Caption Evaluation
EMNLP 2025 | Research Assistant @ MBZUAI
- Presented new evaluation metric for fine-grained visual-language alignment.
- Addressed CLIP's limitations, proposing a novel training objective for improved granularity.

A Quantitative Theory for Genomic Offset Statistics
MBE 2023 | Research Intern @ INRIA Statify
- Experimented with Bayesian Generative Deep Learning for genome viability prediction.
- Implemented Conditional Variational Autoencoders for genomic data generation.
- Improved genome viability prediction accuracy by 10% compared to statistical methods.

Date Recognition in Historical Parish Records
ICFHR 2022 | Research Intern @ Copenhagen University
- Worked with @Anders Søgaard on handwritten recognition of Danish registries.
- Led experiments on multi-task learning to leverage external datasets and tasks.
- Incremented accuracy by 2% by comparing label encoding options.