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## EDUCATION

**UNIVERSITY PARIS-SACLAY**  
**MSc ELECTRICAL ENGINEERING,**  
**MACHINE VISION AND AI**  
 Jun 2020 - Jun 2022

**UNIVERSITY OF CHILE**  
**MECHANICAL ENGINEER**  
**(ENGINEERING DIPLOMA)**  
 Completed Jun 2018  
 Cum. Grade: 6.2/7.0 (GPA 3.7)  
 Years of studies: 6

## COURSEWORK

Probability and Statistics  
 Linear Algebra  
 Optimization  
 Algorithms and Data Structures  
 Statistical Machine Learning  
**CS232N CNNs for Visual Recognition**

- Stanford online course.  
 Implemented and published all assignments in israfelsr/CS231n.

Computer Vision  
 Information Theory  
 Image and Video Processing  
 3D Data Analysis  
 Reinforcement Learning  
**Research Project**

- Implemented an unsupervised learning algorithm based on optimal transport to jointly learn the distribution of different datasets (GitHub).

## SKILLS

### PROGRAMMING

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

### LANGUAGE

Spanish: Native  
 English: Fluent (C2)  
 French: Excellent command (C1)  
 German: Basic (A1)

## OTHER HOBBIES

Running  
 Swimming  
 Playing the guitar  
 Animal cognition and behaviour enthusiast

## EXPERIENCE

### HUGGING FACE | PREDOCTORAL FATIMA FELLOWSHIP

June 2022 – Present

- Experimenting with using Masked Autoencoders as Language Models to represent text as images.

### INRIA | RESEARCH INTERN @ STATIFY TEAM

April 2022 – Present | Grenoble, France

- Studying the use of Deep Learning architectures for estimating the viability of a genome in certain environment.
- Implemented Conditional VAEs for generation of genomic data under environmental conditioning.
- Implemented the inference of Gene-Environment association.

### COPENHAGEN UNIVERSITY | RESEARCH INTERN @ COASTAL

Oct 2021 – March 2022 | Copenhagen, Denmark

- Part of a team of PhDs and professors working on handwritten recognition in Danish registries.
- Led the experiments on MTL to leverage other datasets and tasks.
- Implemented and evaluated different label encodings for the classification task.

### EXCELERATE | SOFTWARE ENGINEER INTERN

Jul 2021 – Sept 2021 | Copenhagen, Denmark

- Designed and implemented a pipeline that fetched descriptions of university courses and summarized them (code).
- Developed a web scrapper to obtain the courses descriptions.
- Designed and implemented the database to store the different university courses.
- Integrated a pre-trained language model based on the transformer architecture to summarize the coursework of a student.

### MUNDOS VIRTUALES | ROBOTICS ENGINEER

Apr 2018 – Nov 2019 | Santiago, Chile

- Designed, prototyped, and manufactured robotics components and machines.
- Developed python scripts for robotic arms involving decision and integration.
- Researched and manufactured state-of-the-art soft robotics for handling objects.
- Fine-tuned a YOLO architecture to detect ripe fruits using self-made dataset.
- Simulated and modeled robotic arms using 3D environments to harvest the fruit.

## OTHER PROJECTS

### FAILURE DETECTION USING VIBRATION MODES AND CNNs (ENGINEERING THESIS)

- Implemented and compared different mathematical methods for failure detection based on the vibration modes of the material.
- Showed that CNNs trained for semantic segmentation obtain comparable results.

### KAGGLE COMPETITIONS: BRAIN MRIs AND CT LUNGS SCANS.

- Improved the classifier performance (+XX% accuracy) by preprocessing the MRI data using contrast enhancement, tissue isolation, and orientation normalization.
- Implemented a multimodal model using CT images and patient tabular data.

### ASSOCIATIONS IN THE UNIVERSITY OF CHILE

- Led teams to organise scientific events and faculty projects that involved coordinating around 100 people to host more than 15K visitors.
- Led organization of the university job fair, bringing together more than 60 enterprises and 4000 engineering students.

## AWARDS

2022	Fellow	Fatima Predoctoral Fellowship
2020	Fellow	MIT Santander Scholarship: Leading Digital Transformation
2018	Honors	Graduated with the highest academic distinction
2015-2018	Honors	Dean's list
2011	Honors	High School Academic Excellence

