



# Edwing Ulin Briseño

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## EDUCATION

### Polytechnic University of Valencia

*PhD candidate in Technologies for Health and Wellbeing*

**Valencia, Spain**

*January 2025 - January 2028*

### AI for Globals Goals

*Oxford Machine Learning Summer School in Health Track*

**Oxford, United Kingdom**

*July 2023*

### Universitat de Girona

*MSc. Erasmus Mundus Joint Master in Medical Imaging and Applications*

**Girona, Spain**

*September 2022 - June 2024*

- Thesis in collaboration with the German Center for Neurodegenerative Diseases.
- In collaboration with Università degli Studi di Cassino e del Lazio Meridionale and L'université de Bourgogne.
- Worked with Artificial Intelligence and Deep Learning implementation to health, Statistical Learning, Image Registration, Computer Aided Diagnostic and Medical Robotics

### Instituto Tecnológico y de Estudios Superiores de Monterrey

*B.S. Biomedical Engineering*

**Zapopan, Jal, Mexico**

*August 2016 - May 2021*

## WORK EXPERIENCE

### Intel Corporation

*Functional Validation Engineer*

**Zapopan, Jal, Mexico**

*July 2021 - August 2022*

- Runned and Coded tests to check the functionality of the internal IP of the Xenon family and reported findings to Digital Architects to correct them.
- Designed a test plan for future products on the lineup of intel, chose configurations, and tests to run, prepared versions of software to use, and coordinated with other teams for the testing phase of the product.
- Gainend internal certification on Product Assurance and Security White Belt and Yellow Belt.
- Part of the Interview team to evaluate candidates on software background and give an evaluation on their performance.

### German Center for Neurodegenerative Diseases

*Visiting Researcher*

**Bonn, Germany**

*Feb 2024 - June 2024*

- Implemented a Fully Connected Dense U-Net to overhaul the White Matter Hyperintensity Segmentation process for the Rhineland Study.
- Engineered and validated custom training, data loaders, datasets, and validation loops for performance benchmarking against Dense Convolution Net and nnU-Net architectures.

## PROJECTS

### White Matter Hyperintensities Segmentation

- Using Python and Dense U-Net, this project automates MRI-based segmentation of white matter hyperintensities, enhancing early detection of neurodegenerative diseases. It features a novel approach combining multi-planar data representation and innovative training to tackle WMH segmentation complexities, evaluated extensively on Rhineland Study and UK Biobank datasets. [https://github.com/EdAlita/white\\_matter\\_hyperintensities\\_segmen](https://github.com/EdAlita/white_matter_hyperintensities_segmen)

### Lung Registration Project

- Features advanced image registration algorithms implemented in Python, designed for lung images. This project focuses on precise alignment and analysis of lung scans, demonstrating applied image processing techniques in medical imaging. [https://github.com/EdAlita/lung\\_registration](https://github.com/EdAlita/lung_registration)

### Magnification-Specific Breast Histopathology Image Classification

- A project that compares machine and deep learning models for classifying breast cancer images using the BreakHis dataset in Python. It explores various image magnifications, utilizing multiple classification algorithms to assess their performance. <https://github.com/EdAlita/magnification-specific-breast-histopathology-image-classification-using-machine-and-deep-learning>



### **IBSR18 Brain Tissue Segmentation**

- This project employs both multi-atlas segmentation and nnUNet models in Python for segmenting brain tissues from the IBSR18 dataset, focusing on white matter, gray matter, and cerebrospinal fluid, showcasing the application of hybrid segmentation techniques in neuroimaging. <https://github.com/EdAlita/IBSR18-brain-tissue-segmentation>

### **Melanoma Deep Learning Project**

- Leverages TensorFlow and Keras within Python and Jupyter Notebook for detecting melanoma from dermatological images, utilizing deep learning for medical diagnostics, emphasizing model training and image analysis. [https://github.com/EdAlita/melanoma\\_deep\\_learning](https://github.com/EdAlita/melanoma_deep_learning)

### **Alzheimer Classification Challenge**

- Uses machine learning techniques in python to tackle the classification of Alzheimer's disease, focusing on model selection, feature extraction, and validation, to improve diagnostic accuracy using related medical datasets. <https://github.com/EdAlita/AlzheimerClassificationChallenge>

### **SKILLS & INTERESTS**

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**Skills:** Python, Jupyter Notebook, Dense U-Net, TensorFlow, Keras, PyTorch, SimpleITK, NiBabel, SciPy, NumPy, Matplotlib, scikit-image, OpenCV, PIL, machine learning, deep learning, medical image processing, lung image registration, histopathology image classification, brain tissue segmentation, melanoma detection, Alzheimer's disease classification, neuroimaging, multi-atlas segmentation, nnU-Net.

**Interests:** Reading, Teaching, Videogames, 3D printing, Boxing, Skating, and Investigating New Tech.

### **References**

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Santiago Estrada, thesis supervisor: [santiago.estrada@dzne.de](mailto:santiago.estrada@dzne.de)

Martin Reuter, thesis supervisor: [martin.reuter@dzne.de](mailto:martin.reuter@dzne.de)

Arnau Oliver, a professor from Girona University: [arnau.oliver@udg.edu](mailto:arnau.oliver@udg.edu)

Xavi Llado, a professor from Girona University: [xavier.llado@udg.edu](mailto:xavier.llado@udg.edu)