Santiago QUINTEROS

CONTACT

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LANGUAGES

- Spanish- First language
- English - C2
- French - C1

TECHNICAL SKILLS

- **Programming Languages:**
  Python (Pytorch, VTK, OpenCV), Matlab, C, R
- **Operative systems & Version Control:**
  Linux, GitHub, DVC
- **Imaging & 3D Modeling Software:**
  3D Slicer, ITK-SNAP, ImageJ, Blender
- **Project management :**
  SCRUM, CRISP, GANTT, Trello
- **Deep Learning:**
  Convolutional Neural Networks
  Variational Autoencoders, Unet
  Data Curation
- **Machine Learning:**
  Random Forest, PCA
- **Applied Mathematics:**
  Stochastical modeling & Analysis, Optimization

SKILLS

- Team spirit
- Commitment
- Willingness to learn
- Autonomy
- Prudence

HOBBIES

- History enthusiast: youtube.com/@UnGranNudo
- Sports: Running, sailing, lifesaving, surf, ski
- Clubs: International Students, Astronomy
- MICRO:BIT teacher for children 2018
- Volunteer Experience: 2015-2017
  Children's activities coordinator

PROFILE

Master of Science in Engineering graduate, specializing in artificial intelligence, image and signal processing with experience in Deep Learning, Machine Learning and biomechanics.

EDUCATION

Université de Rennes | Rennes, France 2023-2024
Master of Sciences in Signal Processing
- M2: Signal, Vision, Waves & Systems

IMT Atlantique | Brest, France 2022-2024
Diplôme d'ingénieur généraliste (MSE)
- M2: Mathematical and Computational Engineering
- M1: Healthcare Engineering

Universidad de la República | Montevideo, Uruguay 2018-2024
Electrical Engineering

PROFESSIONAL EXPERIENCE

GE HealthCare I M2 internship - Deep Learnig | Paris, France
Apr - Sept 2024
- Designed and developed multiple U-Net inspired architectures to reconstruct breast thickness images for contrast-enhanced mammography.
- Data Curation: Filtered a dataset of 10,000 clinical cases by establishing and applying specific selection criteria.
- Evaluation: Assessed models using both qualitative and quantitative metrics, including Mean Squared Error (MSE) and Image Gradient MSE.
- Achieved a 75% improvement in edge reconstruction precision compared to state-of-the-art methods.

Technical Environment: Python, Pytorch, GitLab, DVC, ImageJ, Linux, Latex.

INSERM | M1 internship - Applied Mathematics | Brest, France
Mar - July 2023
- Developed a mathematical method to extract the knee's rotation axis for the design of custom knee prostheses using 3D quadratic functions.
- Automated the extraction of anatomical angles for intraoperative software.
- Improved the precision of the existing axis-extraction method by 2°.

Technical Environment: Python, VTK, Matlab, 3D Slicer, Linux, PCA.

ACADEMIC PROJECTS

AUTOMATIC HAND BONE SEGMENTATION Sept 23-Mar 24
IMT Atlantique - INSERM I Brest, France
- Implemented nnU-Net for the automatic segmentation of hand bone structures to assist in trapeziometacarpal surgery.
- Data Curation: Selected the best training cases from 15 DICOM CT scans.
- Applied post-processing techniques to improve the segmentation.
- Achieved a Dice score exceeding 96%.

MULTI-ORGAN SEGMENTATION IN ABDOMINAL MRI Oct - Dec 22
IMT Atlantique I Brest, France
- Scaled and optimized a Spatial Random Forest model.
- Enhanced pixel classification by identifying and incorporating spatial features such as intensity, neighboring regions, and symmetry.
- Achieved a Dice score of over 80%, improving classification accuracy by 10%.