Aritz Lizoain
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EDUCATION

- **University of Cantabria**   **Santander, Spain**
  Bachelor of Science in Physics   *August 2016 - September 2020*
  Relevant courses: Advanced Computation, Programming, Numerical Methods, Laboratory Computational Tools, Advanced Experimental Techniques (with honors), Ordinary and Partial Differential Equations, Linear Algebra, Differential and Integral Calculus.

  Relevant topics: Data processing, numerical analysis, object-oriented programming, probability and statistics, software development.

- **University of Zurich / Erasmus+**   **Zürich, Switzerland**
  Bachelor of Science in Physics   *August 2018 - September 2019*
  Relevant courses: Statistical Mechanics and Molecular Simulations.

EXPERIENCE & PROJECTS

CNN Image segmentation
Duration: 7 months

- Developed a deep learning application for research on dark matter. The software performed multi-class image segmentation on images from direct detection experiments. Worked in the implementation of:
  * Image pre-processing
  * Network structure and parameter optimization
  * Model training and testing

- Employed main packages: TensorFlow, Keras, scikit-learn, OpenCV, scikit-image, Pandas, NumPy.

- As a result of the obtained exceptional results, offered the opportunity to contribute in the 'DarkMachines' collaboration.

MD simulation
Duration: 5 months

- Designed and developed a molecular dynamics software in Java, with the assistance of a Fortran90 code, obtaining an outstanding grade in the Advanced Computation course.

- Excellent group communication and organization established. The team was highly focused on specific customer needs; experience, modularity and performance.

- Programming knowledge: software modeling (UML), computational complexity and algorithmic efficiency.

SKILLS & INTERESTS

- **Technical Skills:**
  - Python
  - Java
  - MATLAB
  - SQL
  - Wolfram Mathematica

- **Languages:**
  - Spanish (native)
  - Basque (native)
  - English (advanced C1)
  - French (intermediate B1)

- **Achievements and Interests:**
  - Earned the International Diploma in Physics
  - Studying machine learning applications