André Lanrezac

Bioinformatician | Scientific Developer

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lanzac.github.io

Skills

Programming: Python3, C++, C#, Bash, C, HTML, CSS
Technologies: Git, CI/CD (GitHub Actions), Docker, Unity, GDB/LLDB, CMake, MongoDB, Streamlit
Languages: French (native), English (proficient), Mandarin (beginner)

Experience

Research Assistant & Reseach engineer 2019 – 2024
Laboratory of Theoretical Biochemistry, IBPC · CNRS , Paris

- Led the writing of a detailed review article on interactive molecular simulations (IMS) [1] after decades of diverse research by the community, resulting in its publication in a high-impact journal and providing ongoing support for researchers in this area
- Development of a software suite integrating visualisation and molecular simulation with human interaction [2, 3]

Bioinformatics Drug Design Intern Feb 2019 – June 2019
Bioinformatics and biophysics team, IMPMC · Sorbonne université , Paris

- Developed a cyclic peptide docking method by combining Autodock with REMD simulations in GROMACS, and compared the results with the HADDOCK docking tool.
- Manual design of cyclic peptides with UCSF-Chimera.

Bioinformatics Structural Analysis Intern July 2018
Bioinformatics Research Group, ISYEB · Sorbonne université , Paris

- Contributed to developing a program for rapid protein structure similarity searches. (Python).

Education

Université Paris Cité – Ph.D. in Bioinformatics 2023
Advisor: Dr Marc Baaden
Sorbonne Université, Paris – B.S. in Biology & M.S. in Bioinformatics 2019

Publications

[1] André Lanrezac, Nicolas Férey, and Marc Baaden. "Wielding the power of interactive molecular simulations". *WIREs Computational Molecular Science* (July 2022). DOI:10.1002/wcms.1594.

[2] André Lanrezac et al. "Fast and Interactive Positioning of Proteins within Membranes". *Algorithms* (Nov. 2022). DOI:10.3390/a15110415.

[3] André Lanrezac and Marc Baaden. "UNILIPID, a Methodology for Energetically Accurate Prediction of Protein Insertion into Implicit Membranes of Arbitrary Shape". *Membranes* (Mar. 2023). DOI:10.3390/membranes13030362.

[4] André Lanrezac, Nicolas Férey, and Marc Baaden. "Interactive Molecular Dynamics". *Reference Module in Chemistry, Molecular Sciences and Chemical Engineering*. Elsevier, 2023. DOI:10.1016/B978-0-12-821978-2.00115-X.