

Alphafold training

2 days (14 hours)

Presentation

Our Alphafold training course will enable you use this powerful artificial intelligence tool to predict protein structures and integrate it into your research projects. Alphafold is a software package created by [Google DeepMind](#) that uses the amino acids in proteins to predict their structure. It is a tool widely acclaimed by the scientific world.

Our program will enable you to master the basics of bioinformatics and Alphafold architecture. You'll learn the basic UNIX commands that will enable you to manage the files and directories needed analyze your proteins.

Our training will also teach you how to master confidence scores analyzing and validating your predictive structures to verify their quality. You'll also learn how to use publications and GitHub code to help you collaborate effectively and cite your results in scientific publications.

Like all our training courses, it runs on the latest version of the tool: [Aphafold v2.3](#).

Objectives

- Understanding Alphafold's architecture
- Use and validate predictive structures
- Integrate results into scientific publications

Target audience

- **Scientists**

Prerequisites

- **Basic molecular biology**
- Know the basics of command lines

OUR ALPHAFOLD TRAINING PROGRAM

INTRODUCTION TO ALPHAFOLD AND PROTEIN FOLDING

- Origins and developments
- Understanding protein folding
- The importance of protein structures in molecular biology
- Overview of AlphaFold versions, in particular AlphaFold2

BASICS OF BIOINFORMATICS AND COMPUTER SCIENCE APPLIED TO ALPHAFOLD

- Using protein structure databases
- Basic UNIX commands for file and directory management
- Script execution on high-performance computing (HPC) platforms

ALPHAFOLD OPERATING PRINCIPLES AND ARCHITECTURE

- AlphaFold detailed architecture and pipeline
- Understanding AlphaFold2 inputs and outputs
- Protein structure prediction with ColabFold and AlphaFold2 open-source code

ANALYSIS AND VALIDATION OF PREDICTED STRUCTURES

- Evaluation of AlphaFold2 predicted structures with confidence scores
- Interpretation of pLDDT and PAE scores
- Using other tools to check the quality of predicted structures

ADVANCED MODELING AND APPLICATIONS OF PREDICTED STRUCTURES

- Customizing AlphaFold2 structure predictions
- Using predicted structures to address more in-depth research questions
- Contributions from the scientific community to the improvement of AlphaFold2

COLLABORATION STRATEGIES AND SCIENTIFIC COMMUNICATION

- Access and use of AlphaFold publications, GitHub code and official databases
- How to properly cite AlphaFold resources and results in publications
scientists
- Future prospects and monitoring of current AlphaFold2 developments

Companies concerned

This course is aimed at both individuals and companies, large or small, wishing to train their teams in a new advanced computer technology, or to acquire specific business knowledge or modern methods.

Positioning on entry to training

Positioning at the start of training complies with Qualiopi quality criteria. As soon as registration is finalized, the learner receives a self-assessment questionnaire which enables us to assess his or her estimated level of proficiency in different types of technology, as well as his or her expectations and personal objectives for the training to come, within the limits imposed by the selected format. This questionnaire also enables us to anticipate any connection or security difficulties within the company (intra-company or virtual classroom) which could be problematic for the follow-up and smooth running of the training session.

Teaching methods

Practical course: 60% Practical, 40% Theory. Training material distributed in digital format to all participants.

Organization

The course alternates theoretical input from the trainer, supported by examples, brainstorming sessions and group work.

Validation

At the end of the session, a multiple-choice questionnaire verifies the correct acquisition of skills.

Sanction

A certificate will be issued to each trainee who completes the course.