Human Brain Project

EBRAINS

EBRAINS INFRASTRUCTURE TRAINING:

MODEL VALIDATION

Virtual Event
4-7 May 2021

Registration deadline:
20 April 2021

CALL FOR REGISTRATIONS

This training will guide modellers and experimentalists in model validation (comparing simulation results to experimental data) using the **EBRAINS Model Validation Framework**.

Participants will learn how to:

- develop model-agnostic validation tests
- adapt existing models so they can be more easily validated
- use the EBRAINS model and test catalogue
- register, search, view and compare the results of validation tests

The training takes place over four days, with two days of presentations and hands-on demos, followed by two days of participants working on their own validation projects with the assistance of the tutors.

The training is open to all interested researchers working with brain models. The hands-on sessions and project work (last two days) would be undertaken using Python programming language. Some familiarity with Python would be useful, but not essential.

For this **2nd part of the training**, you are welcome to send us a **short abstract, describing your model**.

Abstracts should include:

- A short description of your model
- Simulators/tools used for developing and simulating models
- Overview of validation(s) you wish to implement during the training (specify at least one validation test), along with target (experimental) reference data
- If you have already some questions or comments, you are welcome to mention them
- If your model is already published, please include references at the end of the abstract

Please send your abstract latest until **20 April 2021, 5pm (CET)** to **training-support@humanbrainproject.eu**.

REGISTRATION

As a prerequisite, an EBRAINS account is needed to explore all capabilities of the provided tools in this training. Please create your account at https://ebrains.eu/register (free of charge) first, and then register for the event.

Scientific Chairs:
Shailesh Appukuttan, Andrew Davison | CNRS, France

Organiser:
EBRAINS Infrastructure Training Support | Heidelberg University

Contact:
training-support@humanbrainproject.eu

Further information & registration:
https://www.humanbrainproject.eu/en/education/training-on-model-validation/

Tuesday 4 May 2021

The programme may be subject to change.
An up-to-date agenda can be found here.

Please note that all times are in CEST (=UTC+2)

Part 1: Talks, Demos & Tutorials - Theory + Jupiter Notebook walkthroughs

Part 1 is for all interested to get a basic overview about EBRAINS and more theoretical in-depth knowledge to a specific service category EBRAINS is offering. This is followed by practical Jupyter Notebook walkthroughs and introduction to a suite of tools offering new capabilities for your own research.

14:00 – 14:30 **Welcome to the Training - Getting started (Talk)**
Explain meeting set-up, meeting tools, short introductions
Andrew Davison | CNRS

14:30 – 15:00 **Introduction to EBRAINS - Specific focus on Service Categories (Talk)**
SC1: „Data Knowledge" and SC3: „Brain Simulation"
Andrew Davison | CNRS

15:00 – 15:45 **Present Web Apps - Models and Tests (Talk + Demos)**
Use Case: viewer → view models & tests on App, Model Curation
Andrew Davison | CNRS

15:45 –16:00 **Break**

16:00 – 17:00 **SciUnit Framework (Talk + Demos)**
Model-agnostic test, capabilities, examples
Rick Gerkin | ICON Lab, ASU
Shailesh Appukuttan, Andrew Davison | CNRS

17:00 – 17:15 **Break - Group photo**

17:15 – 19:00 **SciUnit Framework Practice (Hands-on)**
Sample model and test implementation
Rick Gerkin | ICON Lab, ASU
Shailesh Appukuttan | CNRS

19:00 **End of the Day 1**

Wednesday 5 May 2021

The programme may be subject to change.
An up-to-date agenda can be found here.

Please note that all times are in CEST (=UTC+2)

Training on Model Validation - Continue on Part 1 - Day 2:
Talks, Demos & Tutorials - Theory + Jupiter Notebook walkthroughs

Part 1 is for all interested to get a basic overview about EBRAINS and more theoretical in-depth knowledge to a specific service category EBRAINS is offering. This is followed by practical Jupyter Notebook walkthroughs and introduction to a suite of tools offering new capabilities for your own research.

14:00 – 14:30 **Validation Framework (VF) APIs & Python Client (Talk - short overview)**
Introduce & demonstrate usage
Shailesh Appukuttan | CNRS

14:30 – 15:30 **VF Python Client (Hands-on)**
Register models, tests created in SciUnit
hands-on & running tests, handling results
Shailesh Appukuttan | CNRS

15:30 – 15:45 **Break**

15:45 – 16:30 **Present Web App - Models and Tests (Hands-on)**
UseCase: developer → create, edit models & tests on app using models from SciUnit hands-on
Shailesh Appukuttan | CNRS

16:30 – 17:15 **Overview of HippoUnit (Talk + Demo)**
Present tests - dev aspects, results briefly, utility
Sára Sáray (ELKH)

17:15 – 17:45 **Break**

Part 2: Diving into the details...

- Each person/group gives a short overview of own/assigned model and the validations intended to be implemented during this session
- Actively implementing validation tests – either on your own model or models provided by us

17:45 – 18:45 **Flash Introductions - Each Group (Talk)**
Present model, data, tests to be implemented

18:45 – 19:15 **Wrap-up and discussion (Talk)**
Andrew Davison | CNRS

19:15 **End of Day 2**

Thursday 6 May 2021

The programme may be subject to change.
An up-to-date agenda can be found here.

Please note that all times are in CEST (=UTC+2)

Model Validation - Day 4: Continue on Part 2: Diving into the details...

14:00 – 14:45 Running Validations on HPC Resources (Talk + Demo)
Demonstrate validation on Piz-Daint
Shailesh Appukuttan | CNRS

14:45 – 15:00 Break

15:00 – 18:00 Hands-on
Everyone works on their own project

18:00 End of Day 3

Friday 7 May 2021

Please note that all times are in CEST (=UTC+2)

Model Validation - Day 3: Continue on Part 2: Diving into the details...

14:00 – 17:00 Hands-on
Everyone works on their own project

17:00 – 17:15 Break

17:15 – 18:15 Each group - Present results (Talk + Demo)

18:00 End of Day 4 - End of the Event

This project has received funding from the European Union's Horizon 2020 Framework Programme for Research and Innovation under the Specific Grant Agreement No. 945539 (Human Brain Project SGA3).

humanbrainproject.eu/education