Neurons, Behavior, Data analysis, and Theory

- ✓ **NBDT is a true community journal, open in every way**. Open science. Open data. Note: we are openly asking for self-nominations for potential reviewers (see NBDT website: https://nbdt.scholasticahq.com/)
- ✓ **Is my article appropriate for NBDT?**
  - Journal's scope: data, theory, and analysis. NB: This explicitly includes (but is not limited to): behavior-only studies, software development, systems neuroscience, theory-only studies, and data-analysis methods.
  - Manuscript submission: (1) You name 3 editorial board members. (2) Editors are instructed to handle papers that they consider running as a journal club paper for their own lab. (3) If the 3 editorial board members all decline to handle the paper it is automatically rejected. If not, it goes through peer-review.

Neurons, Behavior, Data analysis, and Theory

- ✓ **Who are we?**
  - Academics only (no professional publisher)
  - Editorial board (excerpt):
    - Jonathan Pillow, Anne Churchland, Konrad Kording
    - Aapo Hyvarinen, Adam Kepecs, Angela Yu, Bruno Averbeck, Danielle Bassett, Daphna Shohamy, Jack Gallant, Jeff Beck, Joern Diedrichsen, Kathleen E. Cullen, Larry Maloney, Michael Platt, Nathaniel Daw, Peter Dayan, Quentin Huys, Russ Poldrack, Yael Niv
- ✓ **NBDT is free for readers and for authors** (well, in fact, publication fees are 10$)

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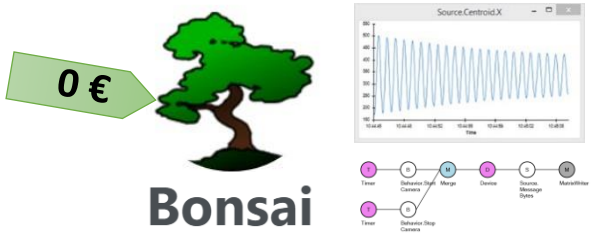
- Open-source hardware
- Growing family of devices
- Share the same communication protocol and architecture
- Each device solves a specific problem
- Matlab, LabVIEW, Bonsai and Python compatibility

Real time state machine

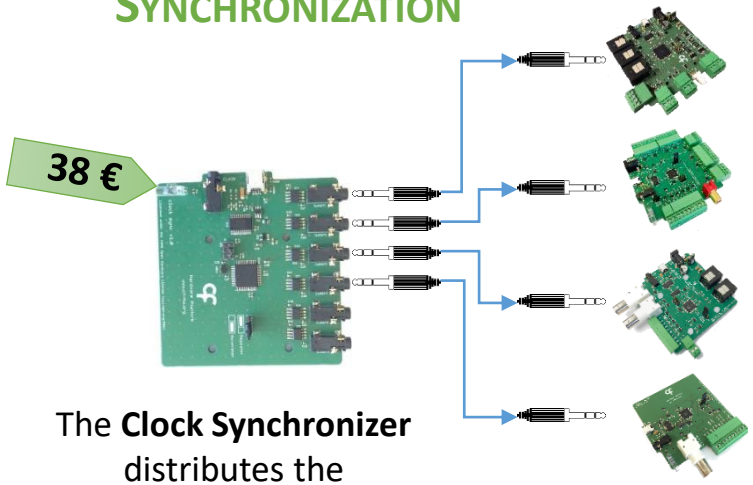


Configurable extraction

Data saved in light binary files.

Integrates video synchronization.

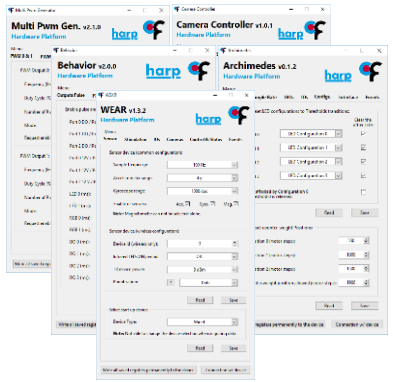
Hardware Synchronization



The **Clock Synchronizer** distributes the timestamp.

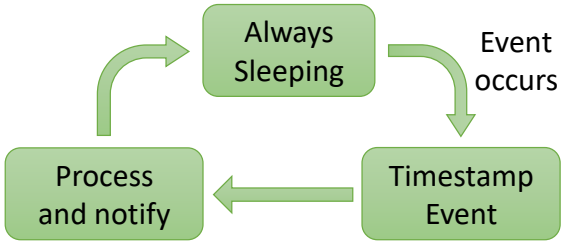
Deviation between devices of **± 44 µs**.

Non-volatile Configuration



Online **updates** of GUI and device's **firmware**.

Events Based



Creates small data files.

Eliminates unnecessary processing.

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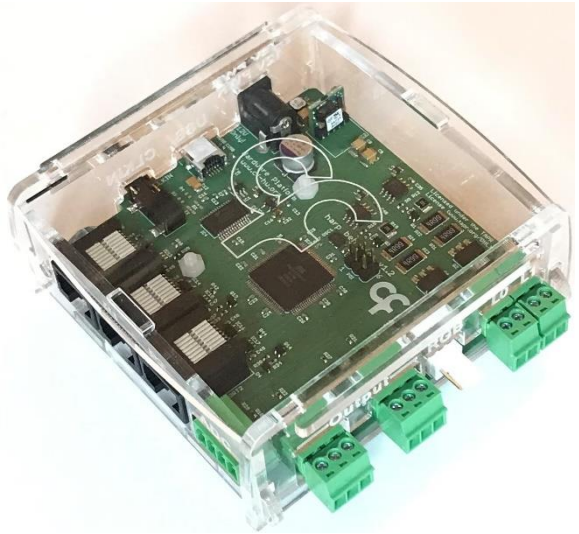
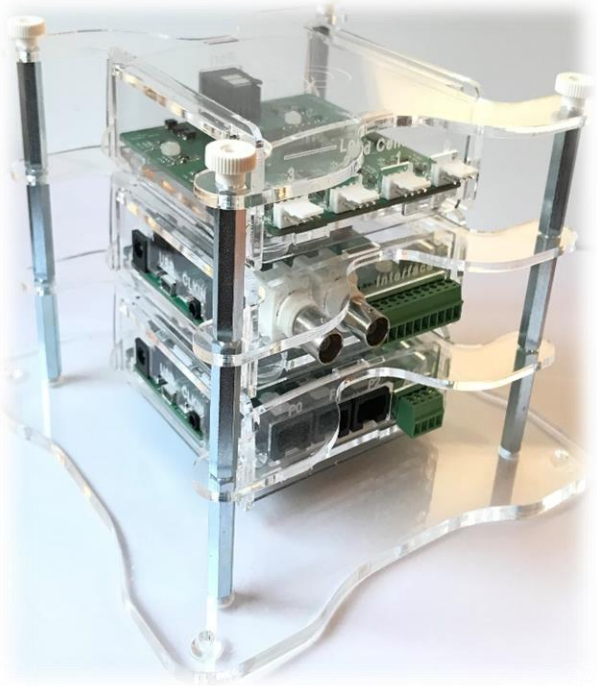
- **Wear** Wireless 9-axis motion sensor with optogenetics
- **Load Cells Reader** With offset removal by hardware
- **Sound Card** 192 KHz, 115 dB SNR, 500us latency
- **Behaviour** All you need for a behaviour setup
- **TTL Synchronizer** Syncs 9x TTL from different devices
- **Archimedes** Lever w/ configurable counter-weight
- **Multi PWM Generator** Synchronized modulated pulses
- **Audio Switch** One input to 16x outputs
- **12V output drive** Drives valves and speakers
- **Camera Controller** Two cameras up to 800 Hz
- **LED Array** For fly's optogenetics
- **RGB Array** 64x RGB with configurable gain

BARE



WITH ACRYLIC CASE



STACKED

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Behaviour

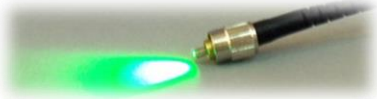
89 €

3x Pokes, Valves and LEDs

1x Photodiode
(sync with visual stimuli)

2x Cameras

2x LEDs
up to 100 mA



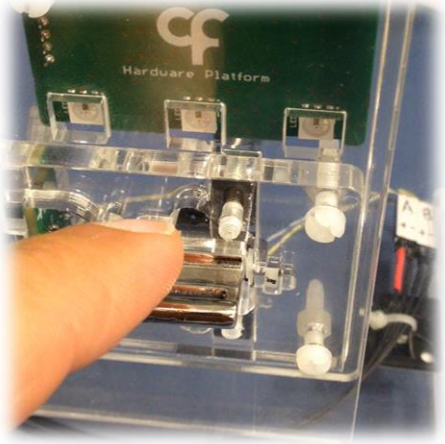
2x Servos

4x Speakers

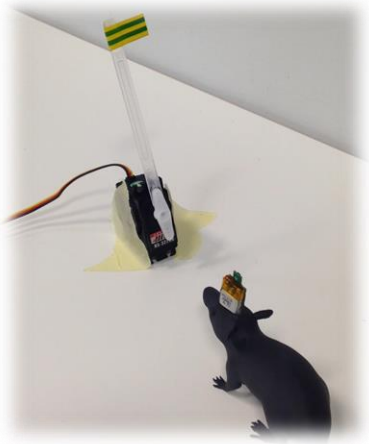
1x Encoder

2x RGBs

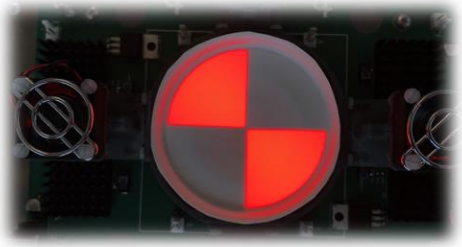
Archimedes



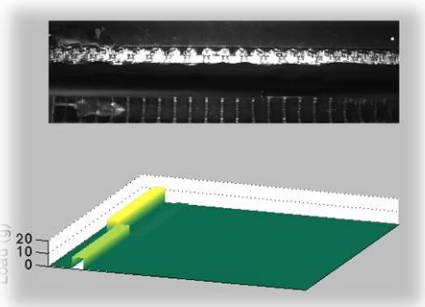
Wear



LED Array



Load Cells Reader



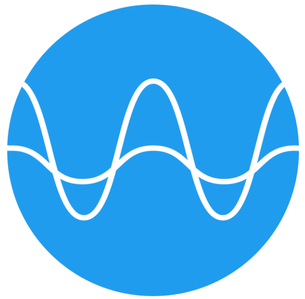
www.cf-hw.org

Want to know more

Share designs

We can share the devices already assembled.

Colaborations



TIMEFLUX

A free and open-source solution for the acquisition and real-time processing of biosignals

EASY TO USE

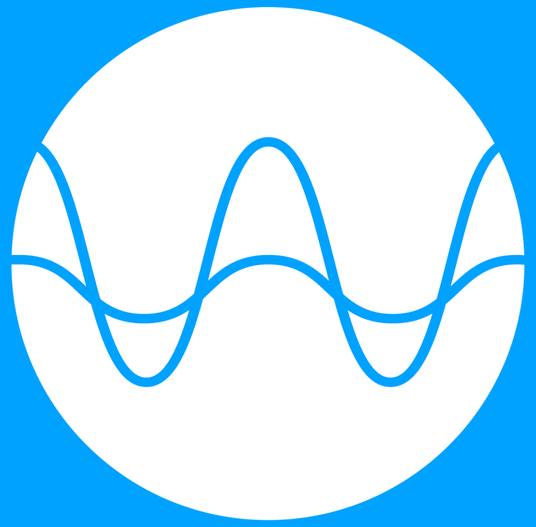
Describe your processing pipelines using a simple YAML syntax.
From device drivers to recording modules, everything is a node.

BATTERIES INCLUDED

Comes with Lab Streaming Layer support, essential DSP nodes, Pub/Sub,
HDF5 recording and playback, Machine Learning tools, web monitoring interface.

DEVELOPER-FRIENDLY

Write your own plugins in Python using the tools you already know:
SciPy, Pandas, Xarray, Scikit-learn.



WWW.TIMEFLUX.IO

Peer Community In
Circuit Neuroscience

Marion Mercier, Vincent Magloire, Mahesh Karnani

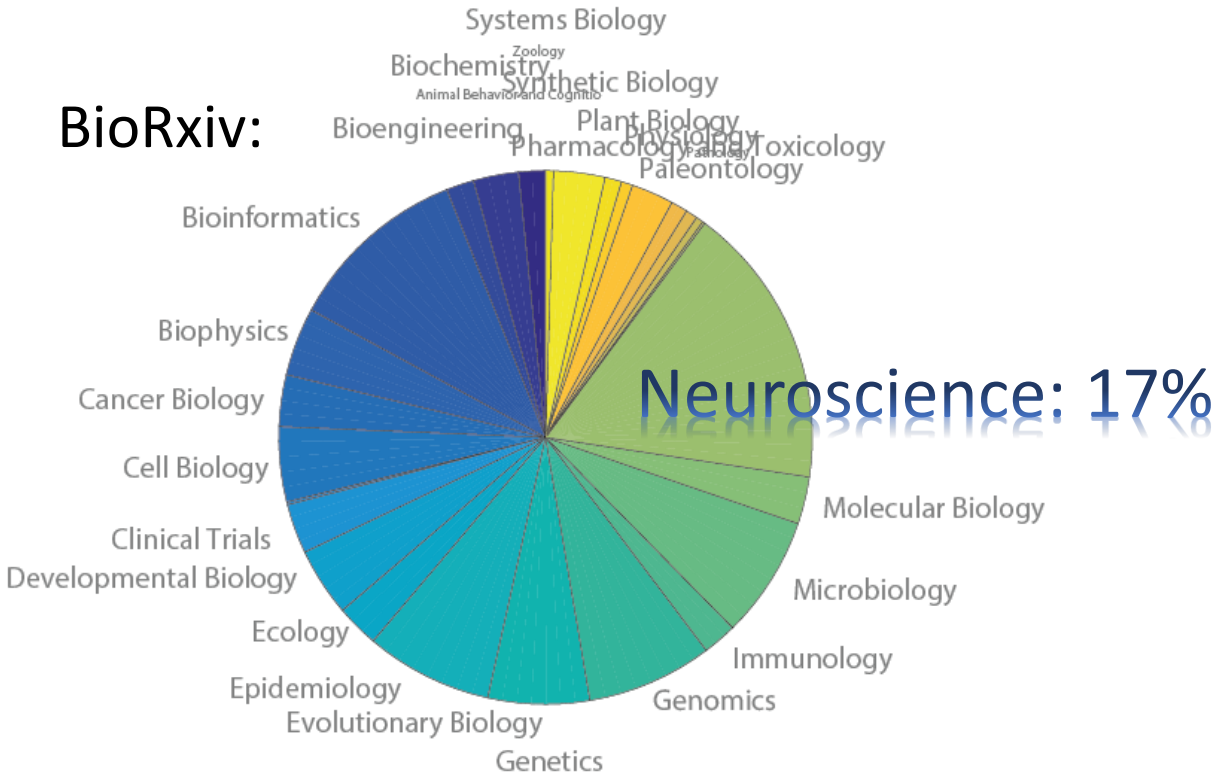
Peer Community In Evolutionary Biology — Free and transparent preprint and postprint recommendations in evolutionary biology

Peer Community In Ecology — Free and transparent preprint and postprint recommendations in ecology

Peer Community In Paleontology — Free and transparent preprint peer-review in paleontology

"Peer Community in" (PCI) is a **non-profit** scientific organization that aims to create specific communities of researchers that **peer-review** and recommend **preprints** in their field, **for free**.

BioRxiv:

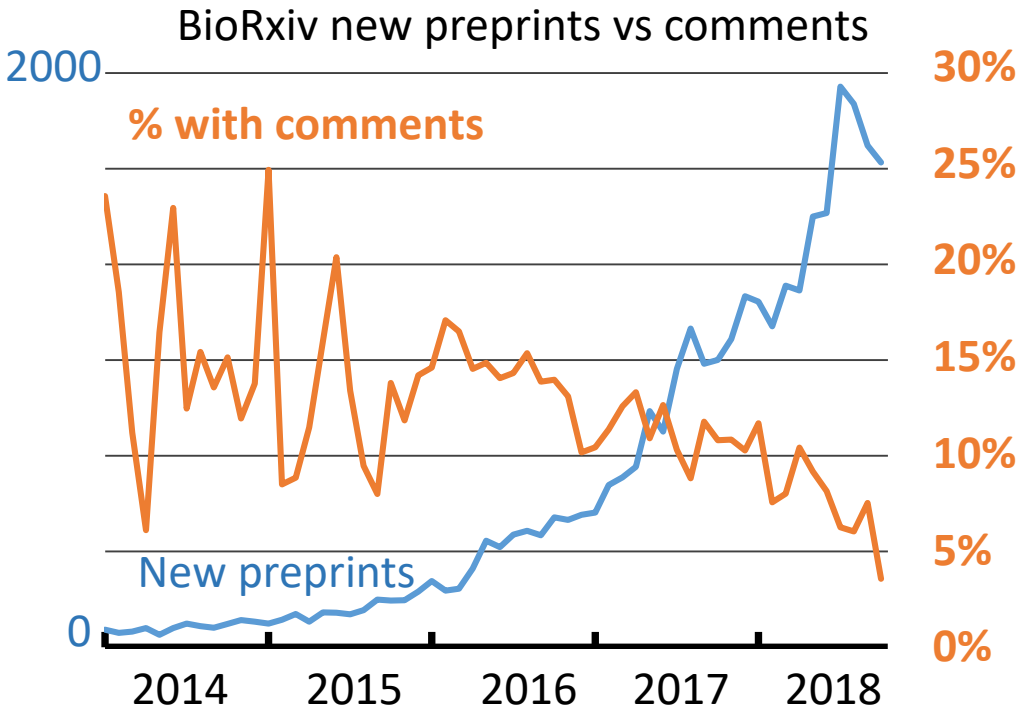


Quickest dissemination of scientific findings

PCI C Neuro

Issues with preprints:

1. Not enough feedback
2. No quality control



Preprint peer-review: PCI

Your preprint → Submit to PCI → Peer-reviewed by PCI for free → Your preprint is recommended

1. Validation of your preprint
2. Feedback to authors
3. Open access reviews

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COME AND CHAT WITH US TODAY – WE WANT TO HEAR YOUR OPINIONS!