Plan Overview

A Data Management Plan created using DMPonline

Title: Brains on Board

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Brains on Board

Data Collection

What data will you collect or create?

Neural and behavioural data on behaving honeybees in closed-loop VR flight simulator
Behavioural data on free-flying bees over short and long ranges
Neural network simulation data (input, output, internal state)
Telemetry from various robotic platforms (ground-based, 3-d gantry, free-flying robot)

How will the data be collected or created?

Virtual reality flight simulator with torque meter and single-cell electrophysiology apparatus
High-speed camera (short range bee flight) and harmonic radar (long range bee flight)
Neural network simulation on virtual and real sensor input, in control of virtual or real robot platform
Vicon motion capture data (ground-based and free-flying robots indoors), on-board robot sensors (e.g. IMU), controller input and output

Documentation and Metadata

What documentation and metadata will accompany the data?

For private data repositories, DataCite metadata will be generated via Figshare based on the compulsory fields, plus a brief textual description field.

For public data repositories, metadata will be generated as above, and accompanying documentation will be published in the appropriate form for the medium (e.g. Readme.md file for Github repositories, online supporting information file for publications associated with data respositories).

Ethics and Legal Compliance

How will you manage any ethical issues?

No ethical issues (no human subject data collected)

How will you manage copyright and Intellectual Property Rights (IPR) issues?

In consultation with patent attorneys commercialisable methods will be protected by patent before or after publication. At time of publication supporting data will be made available freely, or under requested licence, according to sensitivity.

Storage and Backup

How will the data be stored and backed up during the research?

Software will be stored and backed-up on Github
Research data will be stored on appropriate cloud storage services (e.g. Sheffield Google Drive for project data, Figshare (Sheffield and Sussex) and Open Science Framework (QMUL) for repositories), or institutionally-provided, safeguarded internal storage services

How will you manage access and security?

Sensitive data will be stored on private repositories required authenticated access

Selection and Preservation

Which data are of long-term value and should be retained, shared, and/or preserved?

Model and controller structures
Empirical robot data
Behavioural and neural data from animal experiments

What is the long-term preservation plan for the dataset?

Archiving of freely available data on recognised stable long-term repositories (e.g. GitHub, etc.)
Archiving of non-public raw data via institutional storage services.
Archiving of non-public processed data via private online repositories (Figshare (Sheffield and Sussex), OSF (QMUL))

Data Sharing

How will you share the data?

Freely at time of publication in case of no commercial / research advantage considerations
Under licence at researchers' request in other cases

Are any restrictions on data sharing required?

Yes - experimental data from robots, neural and behavioural recordings are all costly to collect and can be exploited long-term by the team as a unique research resource
Experimental data and aspects of models developed and tested during robotic experiments may be commercially sensitive

Responsibilities and Resources

Who will be responsible for data management?

PI and Project Manager (brainsonboard-coordinator@sheffield.ac.uk)

What resources will you require to deliver your plan?

Resources as already provided by open-source providers and institutional partners