Plan Overview

A Data Management Plan created using DMPTool

Title: A computer learning model inspired by human development

Creator: Miguel Santucci - **ORCID:** [0000-0001-6819-7207](0000-0001-6819-7207)

Affiliation: Universidade de São Paulo (www5.usp.br)

Template: USP Template - Minimum

Project abstract:

Machine Learning can highly benefit from integration with other cognitive sciences, such as Psychology and Neurosciences, given that the three assume different perceptions of the same processes. In the same way, the use of Artificial Intelligence mechanisms can give new and insightful meanings for well known phenomena in other areas. We present here a model that tries to unify the three named sciences and allow us to build a neural network architecture based on their approaches to understanding mental processes. We also present a study case that implements the proposed method for a simple and well-known classification task, showing the validity of the proposed model and how the scientific community can match multiple disciplines to produce new and concise results.

Start date: 01-01-2021

End date: 03-12-2021

Last modified: 05-10-2023

Copyright information:

A computer learning model inspired by human development - Description of Data and Metadata produced by the project

The data being saved is the result of the described research, composed of the output datasets, with images and predicted and expected classifications and of the trained weights for the developed neural networks.

These data were created by processing of the input dataset, by training and testing of neural networks architectures.

Planned Research Outputs

Dataset - "Image classification"

Three datasets containing the classification output created in the research:

- Indexed images representing hand-written digits, derived from the EMINST dataset

- Two sets of classifications for the images yielded by the two models developed.

Model representation - "Network weights"

Two sets of zipped pyTorch weights of the two developed architectures, in order make the results reproducible.

Planned research output details

Title	Type	Anticipated release date	Initial access level	Intended repository(ies)	Anticipated file size	License	Metadata standard(s)	May contain sensitive data?	May contain PII?
Image classification	Dataset	Unspecified	Open	None specified		None specified	None specified	No	No
Network weights	Model representation	Unspecified	Open	None specified		None specified	None specified	No	No