

PRoNTo workshop program

(Presented by the CRC and the PRoNTo team)

ULg, March 20-21, 2013

PRoNTo (Pattern Recognition for Neuroimaging Toolbox) is a software toolbox based on pattern recognition techniques for the analysis of neuroimaging data. It is freely downloadable from <http://www.mlnl.cs.ucl.ac.uk/pronto/> and an introductory paper is available from <http://hdl.handle.net/2268/140242>.

Statistical pattern recognition is a field within the area of machine learning which is concerned with automatic discovery of regularities in data through the use of computer algorithms, and with the use of these regularities to take actions such as classifying the data into different categories. In PRoNTo, brain scans are treated as spatial patterns and statistical learning models are used to identify statistical properties of the data that can be used to discriminate between experimental conditions or groups of subjects, or to predict a continuous measure/score.

The workshop will therefore focus on neuroimaging data and machine learning techniques and show how these can be combined to address new neuroscientific questions. The program includes theoretical lectures, a demonstration and a practical 'hands on' session.

Wednesday March 20th: Introduction of main concepts + demonstration

Place : ULg, Amphithéâtres de l'Europe (B4), R54.

Start	End	Title	Speaker(s)
9:30	10:00	Introduction & Motivation	CP/JMM
		Neuroimaging for Machine Learners	
10:00	10:45	Data Representation & Pre-processing	CP
		<i>Coffee break</i>	
11:15	12:15	Validation & Inference	CP
		<i>Lunch</i>	
		Machine Learning for Neuroimagers	
13:30	14:30	Pattern Recognition Methods, basics	JMM
14:30	15:30	Validation & Inference, basics	JR
		<i>Tea break</i>	
16:00	17:00	Demonstration	MJ/JS
17:00	17:30	Questions & Answers	All

Thursday March 21st: Advanced concepts + practical session

Place : ULg, Amphithéâtres de l'Europe (B4), R54, then Département de Mathématiques (B37), 0.42.

Start	End	Title	Speaker(s)
9:30	10:00	Wrap-up & Motivation	CP
		Machine Learning & Neuroimaging	
10:00	10:45	Pattern Recognition Methods, Validation & Inference, advanced	JMM/JR
		<i>Coffee break</i>	
11:15	12:00	Feature selection and weight interpretation	JS
12:00	12:30	Data & Software Resources	CP
		<i>Lunch</i>	
14:00	16:30	Practical (<i>including tea break</i>)	All
16:30	17:00	Questions & Answers	All

List of tutors:

- MJ = Maria Joao
- JMM = Janaina Mourao-Miranda
- CP = Christophe Phillips
- JR = Jonas Richiardi
- JS = Jessica Schrouff

REGISTRATION :

Registration is free but **MUST** be booked in advance as the number of participants is limited by the room size...

To register, please send an email to c.phillips@ulg.ac.be, with 'PRONTO course' as subject line, and provide the following information:

- name and surname
- position (e.g. PhD student, postdoc,...)
- background (e.g. psychology, neurology, engineering,...)
- laboratory/department
- motivation to attend the course (a couple of lines is enough!)