IRP tutorial 3 (week 5)

Agamemnon Krasoulis [a.krasoulis@sms.ed.ac.uk]

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Admin (7 mins for admin and advice section total)

- Github repo

https://github.com/agamemnonc/IRP_material

- Meeting with supervisors
  - Who has met since assignment, or has meeting scheduled?
  - Set up regular meeting?
  - Anyone having trouble meeting with their supervisors?
- Changing your project
  - Who is planning to do this?
  - Deadline Feb 27th, no extra time on IRP

Getting the most out of supervisory meetings

- If you don't know where to start...
  - Ask for names of key authors, journals, books
  - Ask about relevant course materials-- even if you are not IN that course
  - Maybe the first task you have set yourself is too big. Break it down.
- Don't be afraid to ask for clarification if you are unsure of expectations
  - Better to ask immediately/soon than scramble at the last minute
- Remember there likely may be some scope to shape the project to your strengths and interests...but you supervisor won't know this unless you speak up!
- Respect your supervisor's time
  - Come prepared with what you have done, and also with questions to ask
  - Don't promise the unrealistic and then need to backtrack or make excuses
  - Don't lie about what is done, or not
  - Don't miss meetings
  - Very useful to keep track of meetings progress (write-up a short less-than-one-page log after each meeting, outlining progress, agreements and next goals)
  - Some supervisors have lab meetings (ask your supervisor if you want to attend those)

Board presentation (5-minute) demo by myself (10 mins in total)

- Students scan through the tutorial quickly
- Abstract
  - brief background
  - recent improvements
  - problem statement
  - proposed research
  - data
  - evaluation
- Introduction
  - Historical background: decoding kinematics and kinetics (muscle activity) from motor signals in cortex

    - Functional electrical stimulation
    - Recent development: recording using local field potentials
- Motivation
    - First novelty: decoding during free behaviour
    - Second novelty: feature selection for high-dimensional regression problem
    - State-of-the-art in feature selection for such problems
    - Notice that order has been slightly modified
- Datasets
    - Where the data comes from
    - What kind of data
    - A couple of plots (Fig.1 and Fig. 2)
- Methods
    - Signal pre-processing
    - Feature extraction
    - Model fitting: different algorithms that will be used and brief descriptions
- Evaluation
    - Metrics for regression: VAF, CC, nRMSE
    - Mathematical formulations
- Roles of supervisors
    - Not really needed since most of you will have one supervisor
- Timeline
    - Detailed time plan (Table 1)
- Budget
    - Detailed budget (Table 2)
    - Most likely not needed for you

Explaining your research (3mins)

- Important to explain research work to unfamiliar / vaguely familiar audience.
- Think of it as a tiny version of a research proposal
    - Context (Introduction)
    - Impact (Motivtion/Hypotheses)
    - Background (e.g. state-of-the-art)
    - Proposed methodology
    - Evaluation
    - Possible outcomes

Phase 1 (20 mins)

- Form groups of three
- Each one explains to peers their project and listeners take notes.
- Listeners ask for questions and clarifications

Phase 2 (20 mins)

- For each group I select who summarises fellow-student's project (1.5 – 2 mins each)