

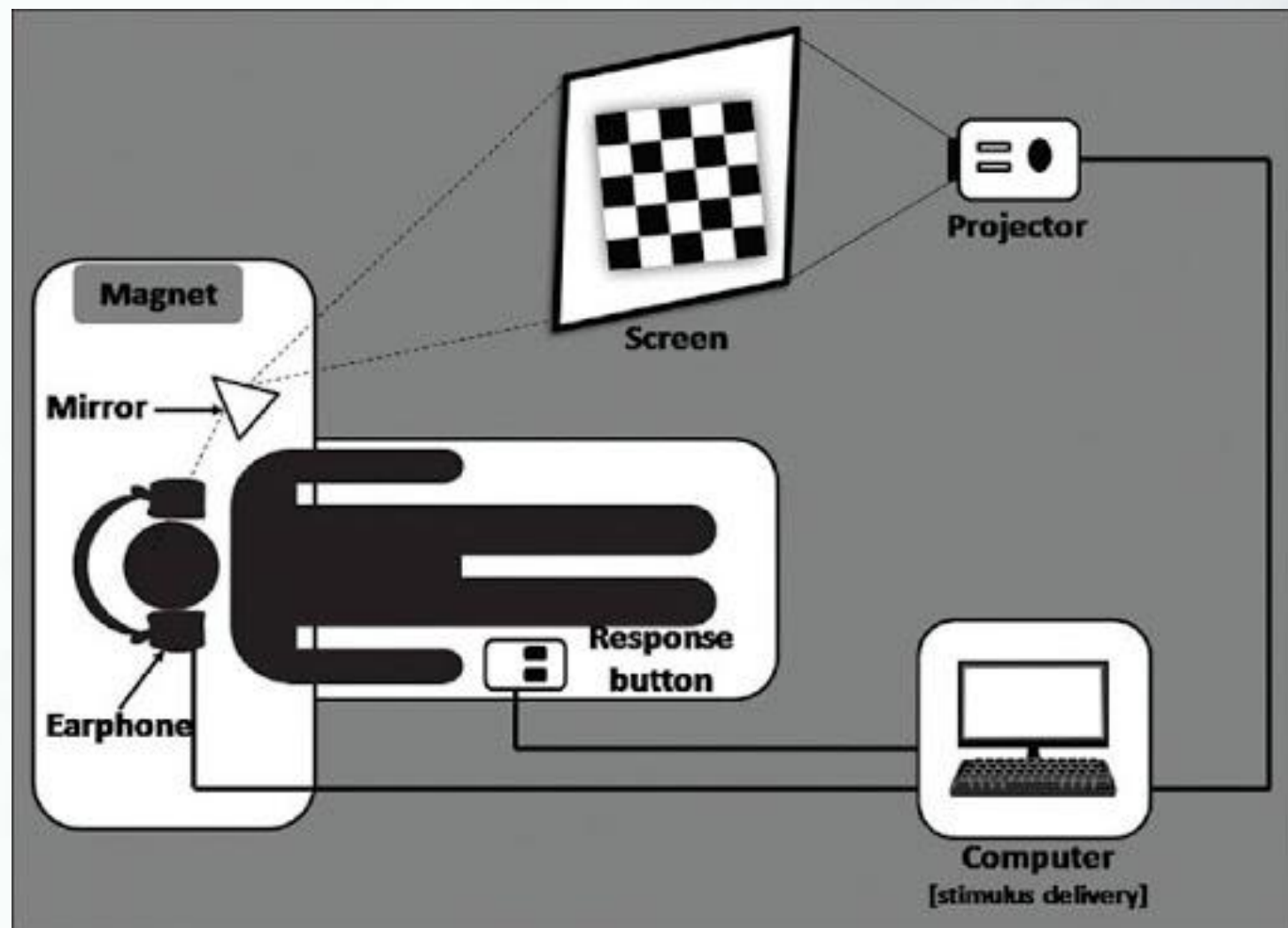
Automated planning for fMRI paradigms design

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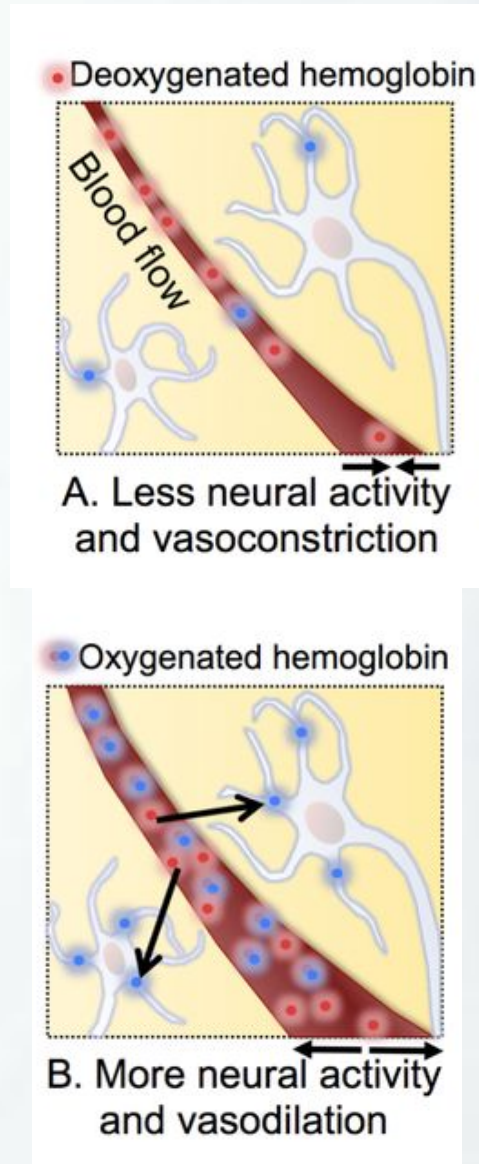
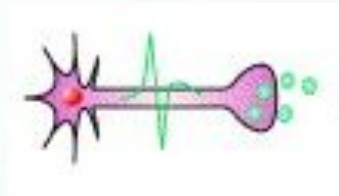
Graduate Program in Computer Science - School of Technology
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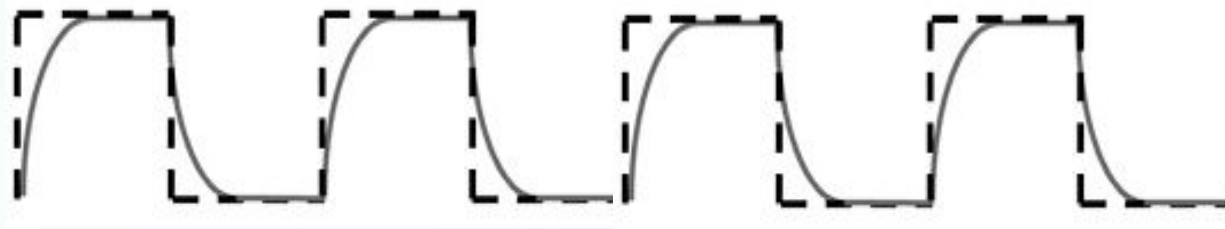
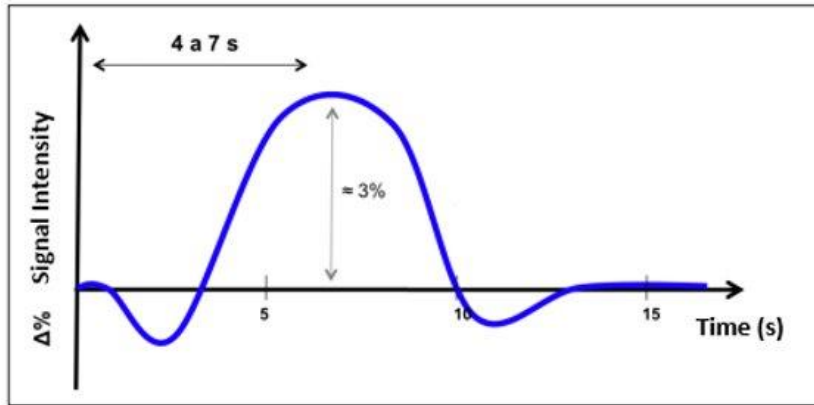
Functional Magnetic Resonance Imaging - fMRI



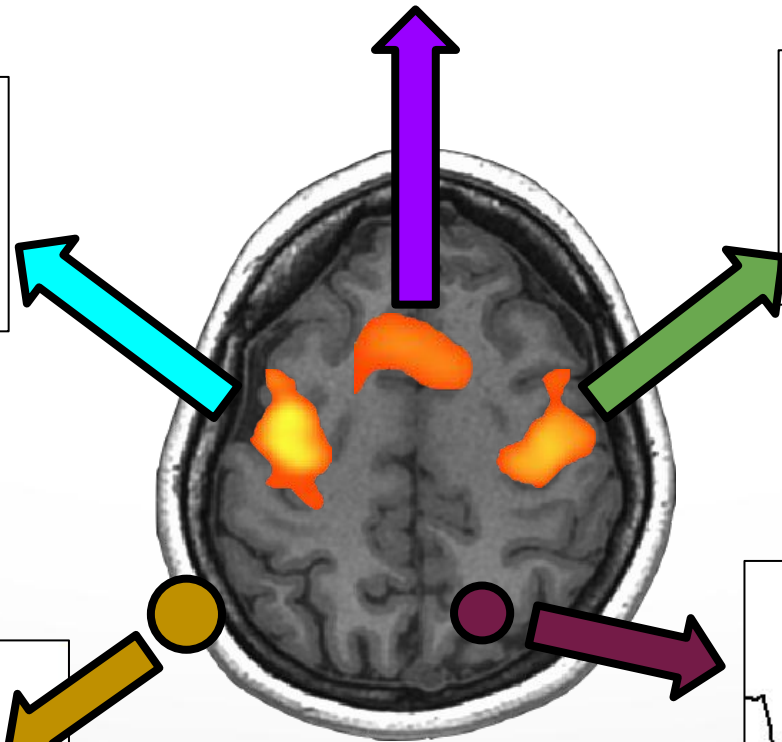
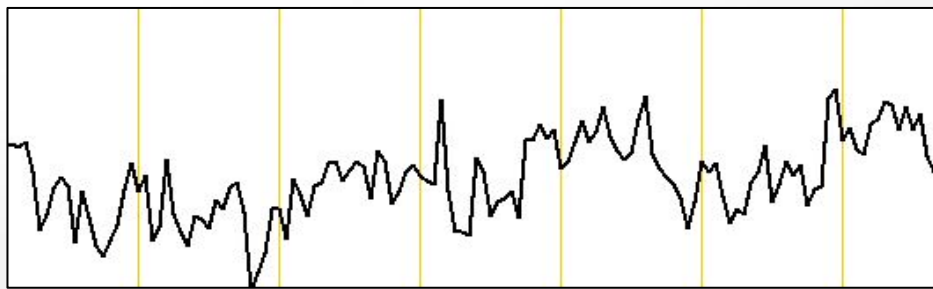
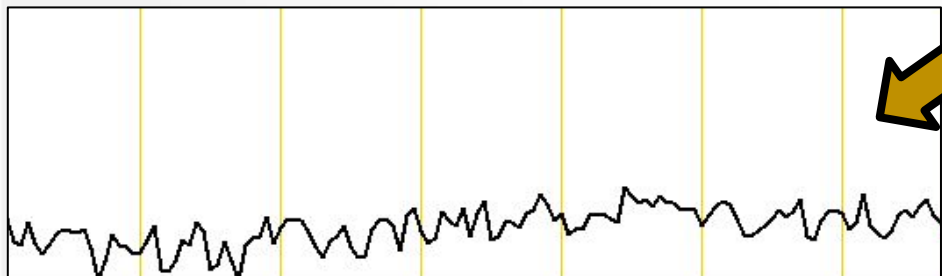
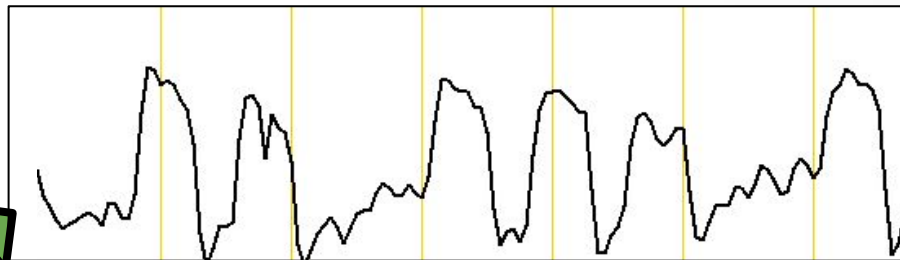
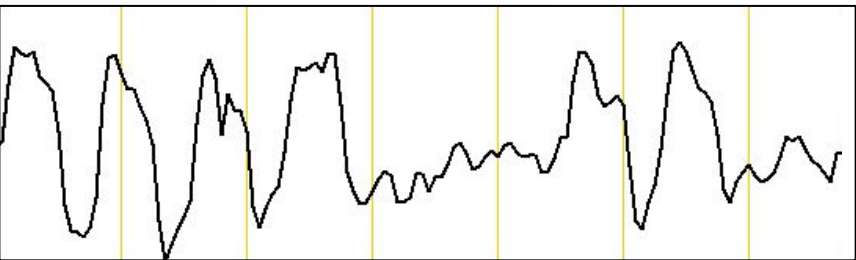
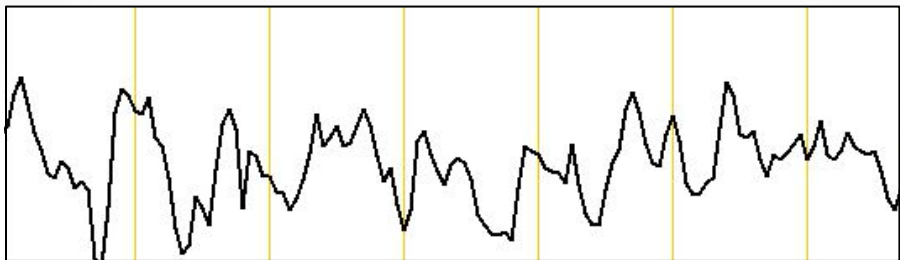
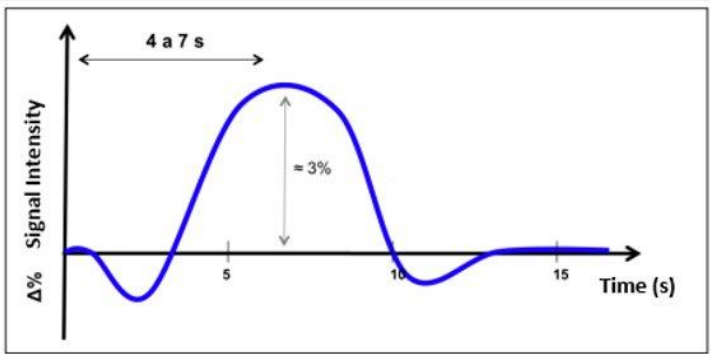
BOLD Signal



Hemodynamic Response



R + L + RL + R



Objective

An fMRI experiment relies on precise and effective paradigm design.

- Design an fMRI paradigm planner:
 - Develop a planner to indicate the proper task according to the research questions.
- Ensure good experimental design.
- Reduce the difficulties in the creation of an fMRI task design.



Technical Approach

Planning research

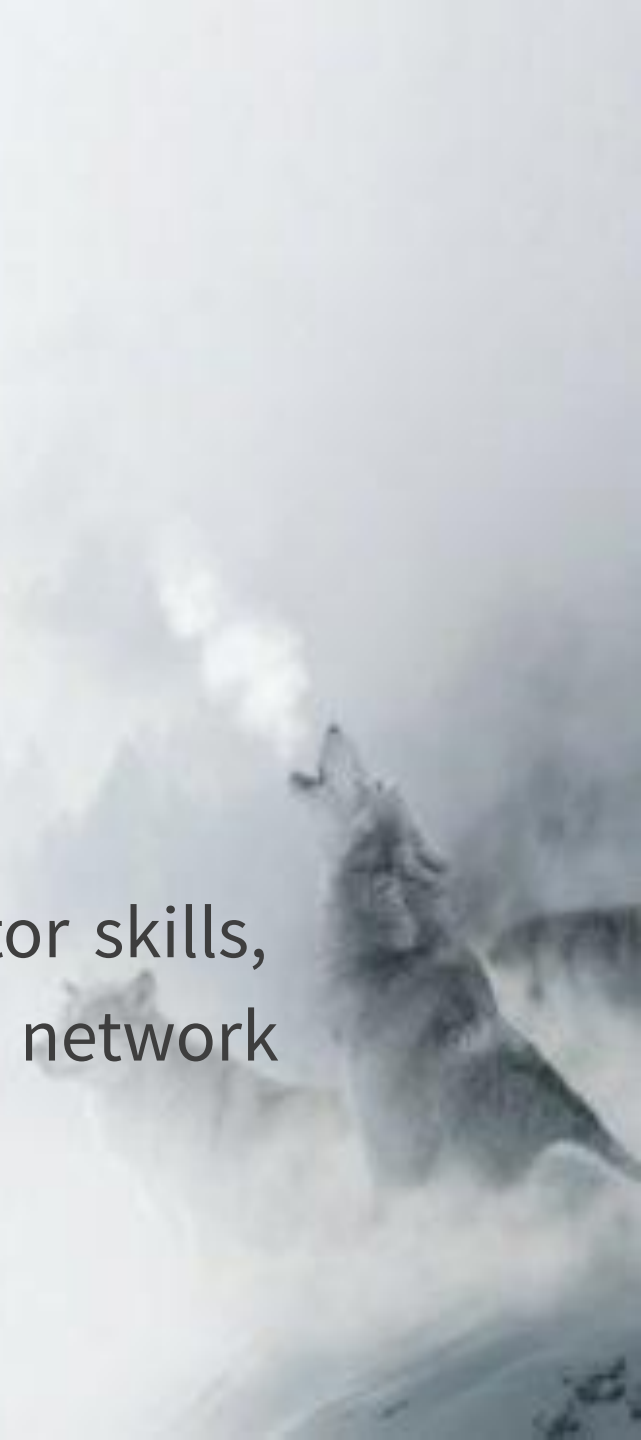
- a. Research on how this specific problem will be modeled in the planning domain;
- b. Path-finding algorithm;
- c. Planner goal: cerebral region to be activated.



Technical Approach

Dataset

- a. Task database provided by Brains;
- b. Paradigms that activate areas related to: Motor skills, language, visual, auditive, memory, attention network and default mode network.



Project Management

- **First step - first week:**
 - Planning techniques;
- **Second step - second week:**
 - Paradigm database from Brains;
- **Third step - third and fourth weeks:**
 - Develop the planner.



References

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