

## Visual programming for multisensory cognitive stimulation exercises Master 2 internship proposal

As part of the StimSense project<sup>1</sup>, we have developed a new interactive multisensory device<sup>2</sup> capable of creating sensory effects and stimulating several senses to simulate real-life situations. Our objective is to set up multisensory exercises in order to conduct long-term evaluations to measure their benefits on people, compared to conventional exercises using the keyboard and the mouse. The system involves two users' categories: caregivers, family, teacher... who build exercises and patients, students... who do exercises).

The goal of this internship is to design a GUI, using UX design methodologies, to create multisensory exercises without computer knowledge and without using visual programming tools that are too close to the paradigms of computer programming.

In order to achieve this goal, the student will:

- Review the current literature on visual programming and mulsemedia<sup>3</sup> players
- Investigate users' needs at Broca Hospital (to be confirmed)
- Design a software using UX design methodologies
- Build the software
- Evaluate the software with the both users' categories at Broca Hospital (to be confirmed)

### **Keywords**

Multisensorial interaction, visual programming, mulsemedia, UX design, cognitive stimulation

### **Prerequisites**

Be enrolled in Master 2 in Computer Science

Programming skills in Python/C#, interest in research and contact with people

### **Place**

Paris 8 University, Saint-Denis, France

### **Salary**

Standard French "gratification" (around 570 € per month)

### **Offer starting date and duration**

6 months of internship from April 1st, 2020

### **Application deadline**

Feb 21, 2020

### **Co-supervision**

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Dr. Brigitte Le Pévéridic, UMR 6285 Lab-STICC, South Brittany University

Dr. Josefina Wallström, [Uptive](#), Sweden

### **How to apply**

Send a resume (CV) and motivation letter to [celine.jost@univ-paris8.fr](mailto:celine.jost@univ-paris8.fr)

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<sup>1</sup> <http://celinejost.com/recherche/projets.php?onglet=7>

<sup>2</sup> C. Jost, B. Le Pévéridic, O. El Barraj, G. Uzan, « MulseBox: Portable Multisensory Interactive Device », in IEEE SMC 2019, IEEE International Conference in System, Man, and Cybernetics, October 6-9 2019, Bari, Italy

<sup>3</sup> Multiple sensorial media <http://www-itec.uni-klu.ac.at/bib/files/a17-ghinea.pdf>