

Google Summer of Code:

About Me:

Full Name: Ahmed Hossam ElSabbagh

Email: Ahmed.h.elsabbagh@gmail.com

GitHub: <https://github.com/AHAMES>

Language: Native Arabic, English Proficient

Location: Giza Egypt

Time-zone: Eastern European Standard Time (GMT+2)

Motivation:

Motivation to take part in Google Summer of Code:

I am almost graduating from college but I find that I never had a chance to be a part of really useful project, and I find that I was never really challenged to push my programming limits during college years except once during a gaming competition. I find that GSoC will give me the chance to test and improve my skills, and it will allow me to create project that will be useful not just for my personal use but for the benefit of the programming community.

Why Choose Sugar Labs:

Two Reason:

1) Sugar Labs is powered by Python which I am very familiar with, there are few companies/organizations that offer Python projects that I am certain I am capable of doing.

2) I have looked into the projects Sugar Activities and I found that the games created help the children develop their minds and skills from early age, and I believe that such experience which I have missed out on should be provided to more people as early of age as possible.

Why do you want to work on this particular project:

I want to help expand the range of the activities, especially with new advanced concepts that have been studying for over a year now (AI and Machine Learning), which I think are important to be understood as early as possible.

My expectations:

During: Guidance through sugar source code and understanding where everything should fit. Give expert opinion to any research point when I could get stuck on.

After: I expect that any work done, there will a constructive feedback on the results of the project, and that I will be informed and involved in any future improvements done for the project.

Project Details:

My Project:

Machine Learning Activity: **Sign Language Teacher**

In this activity, the children could take pictures of themselves using their computer camera or use any picture available in their disposal (Taken by phone or internet). The children would then either record a voice, have python text to speech, or use any audio file in their disposal that would correspond to the gestures they make with their hands and faces.

These photos will be used to train a Tensorflow image classification model, which will respond to the gestures made by the user in any way they train it. Examples of common gestures can be shown as examples but the children can train it to do anything, either responding to their gestures with whatever audio they desire or acting as a sign language translator.

Impact on Sugar Labs:

- Will provide a fun game that can be used to help children create and share a common sign language.
- Can help the children understand basic machine learning concept and their use and why it is important to learn
- A new fun and interesting activity for the curious Children.

Technologies:

Python, Sugar, Tensorflow.

Timeline:

Period	Task
May 6 to May 26	<ul style="list-style-type: none">• Community bonding period• Discussion with the mentors on a more detailed weekly plan.• Discussing implementation details• Setting up development environment• Have better understanding how to develop on Sugar and how to contribute in its development.
May 27 to June 8	<ul style="list-style-type: none">• Implementing an initial user interface
June 9 to 20	<ul style="list-style-type: none">• Researching and understanding Tensorflow on Python and implementing simple prototypes.• Evaluation Phase I
June 21 to 30	<ul style="list-style-type: none">• Adapting the Tensorflow to the user interface.• Making it scalable for a wide range of gestures.

June 31 to July 15	<ul style="list-style-type: none"> • Adapting and refining the design on Sugar. • Evaluation Phase II
July 16 to August 26	<ul style="list-style-type: none"> • Refining design • Fixing all potential bugs on the program • Final Evaluation

I may be largely slowed and hindered in the first 3 weeks because of preparations for Graduation Project which should be finished and presented before 18 June (TBD when exactly), however I will try and work 15 hours a week towards this project until that period is finished.

I plan to work after that 30-50 hours a week to meet the timeline goals.

I don't have any definitive plans regarding the project after GSoC, but at the very least I want to keep fixing bugs and adding new features. I am also currently inexperienced with JavaScript, but I want to learn it (for other purposes) and then work towards re-implementing the project on Sugarizer.

Sugar Lab's Motivation

I may not have any contribution on GitHub, and I may have never worked or contributed to Sugar Labs. But I am a very motivated person and I want to earn the privilege of being a real programmer and contribute to the programming and teaching communities. I am ready to transform my life and work hard on the project if you give me the opportunity and the chance to try, provide it and I will not disappoint your expectations.