

# GSoC Project Proposal

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March 29, 2017



## Student Information

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## University Information

University: Izmir University of Economics

Major: Computer Engineering

Current year and Graduation Date: 4th year, 2017

Degree: BSc

## Project Proposal Information

Proposal Title: SunPy Website Improvements

# Abstract

SunPy website is a platform that introduces the SunPy open-source software package for solar physics based on Python. Its main elements are an about section for introduction of both the software and the team, a blog for the latest updates, astronomy events, and news, a documentation for the developers use, and a gallery for tutorials. However, there are some problems with the website such as the inconsistency between homepage and documentation, and also the out of date look of its design. My proposal will include redesigning each components of the website from scratch by following material design guidelines to enhance the general view, and using the latest web technologies and frameworks to make it more scalable, fast, secure, and responsive. Moreover, I will explain my approach to the implementation of extensions in this project and propose some new features that will undertake the project to a high standard.

## Implementation

### 1. Website Design

The website will be completely designed by following material design guidelines. I am going to use Sketch to create designs since I designed several apps on it and also find its features and tools great. The designs will be all responsive and modular. UI/UX will be improved and call-to-action buttons will become more effective. I primarily plan to get rid of the inconsistency in terms of typography, spacing, colors, and placement. Additionally, I designed two sample mockups as a start.

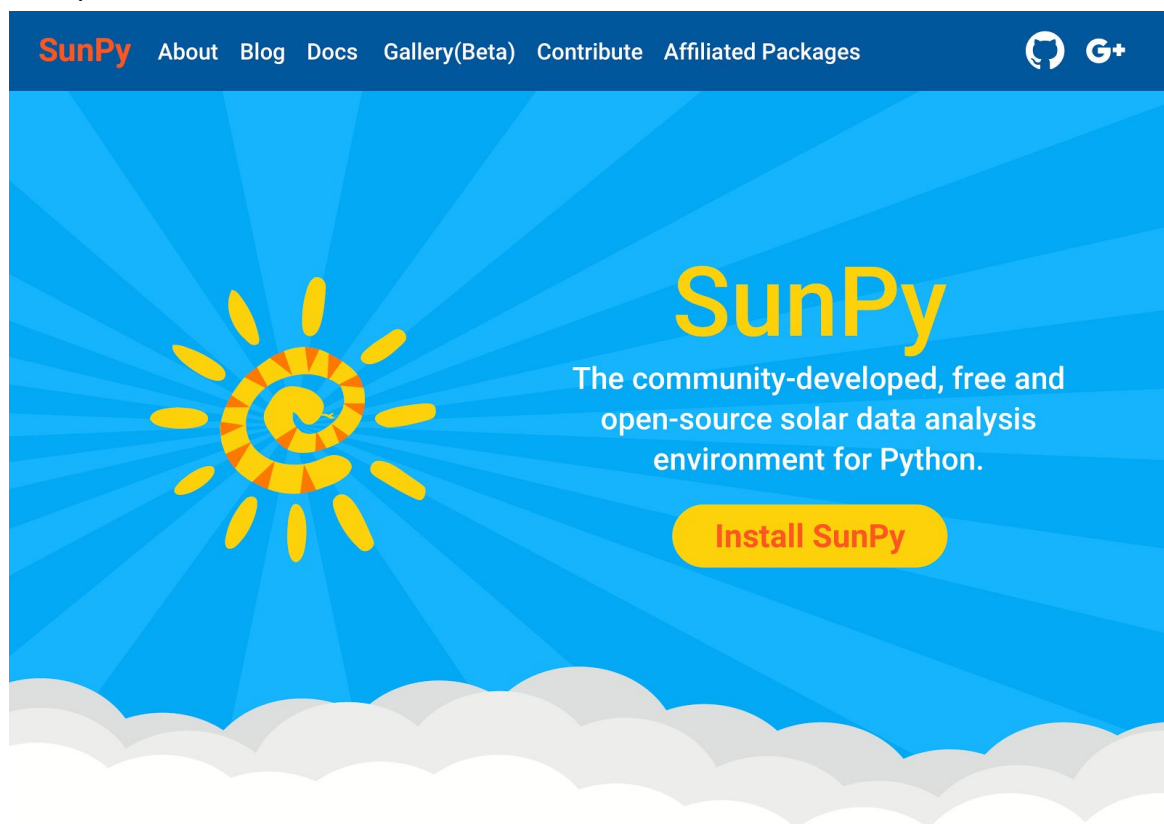


Figure 1. SunPy Home Page

**Installation**

A brief tour of SunPy  
Acquiring Data with SunPy  
Data Types in SunPy  
Plotting in SunPy  
Time in SunPy  
Region of interest  
Customizing SunPy  
Troubleshooting

[API Reference](#)[SunPy Example Gallery](#)[Quick Examples](#)[Tutorials and Guides](#)[Developers Guide](#)[Report Bugs](#)[SSWIDL/SunPy Cheat Sheet](#)

# Getting Started with SunPy

**User Guide**

Find out more about how to use the features of SunPy

**Installation**

Install SunPy by following some easy steps

**Code Examples**

See code examples and get familiar with the environment

**Glossary**

Get familiar with the terminology used in the package

## SunPy User Guide

Welcome to the SunPy User Guide.

SunPy is a community-developed, free and open-source solar data analysis environment.

It is meant to provide the core functionality and tools to analyze solar data with Python.

This guide provides a walkthrough of the major features in SunPy.

For more details checkout the API Reference.

**Figure 2.** SunPy Documentation

## 2. Creating Website Theme

I will be using Sphinx for creating the entire website including the home page and the documentation since the development environment of Sphinx is Python while Jekyll is a Ruby one. SunPy itself is a whole Python project, whether I use a Python based static site generator it would be better for the long term SunPy project. Further, the maintenance cost will be high if I use Jekyll plugins since they need to be written in Ruby. Because of these reasons and after discussing with my mentors, I prefer to use Sphinx for the whole project and separated the development process into two parts such as home section, and the documentation section.

### 2.1. Home Section

Although Sphinx documentation for creating themes is not well-structured and complex compared to Nikola and other Python based static site generators, I found some materials that can help me through implementing the home page. I will use [Tinkerer](#) as a helper documentation for me to implement my custom theme in Sphinx. Tinkerer is a blogging engine and static website generator powered by Sphinx. It is highly customizable and it has a support for custom landing pages. I also researched material design themes written in Sphinx and I found two basic themes that can be beneficial for me as the start of my development process.

- [https://github.com/myyasuda/sphinx\\_materialdesign\\_theme](https://github.com/myyasuda/sphinx_materialdesign_theme)
- [https://github.com/iktakahiro/sphinx\\_theme\\_pd](https://github.com/iktakahiro/sphinx_theme_pd)

I prefer using Google's material components [framework](#). Hence, the theme will be entirely modular and compatible with any future technology. I will use HTML/CSS to create the theme. The sections in the website such as about, blog, gallery, and contribute will be coded according to the designs and they will all be enhanced. I also plan to improve their contents and make some of them appear on the homepage for more interaction.

## 2.2. Documentation Section

Sphinx is a tool that creates rich documentation for software projects. That's why, it is preferred to use for the documentation of SunPy. It is a really powerful tool since it uses restructuredText as its markup language. I will code the theme by following the designs. I can use some basic themes as a starting point to implement my design which is given below:

- <https://github.com/ryan-roemer/sphinx-bootstrap-theme>
- <https://github.com/peterhudec/foundation-sphinx-theme>
- <https://github.com/bitprophet/alabaster> -Default Theme-

I can easily make modifications on these themes. Sphinx themes and its components can be overridden and there are many themes available. I will use Jinja templating engine for Python. I have never used Jinja before, but I am familiar with Django, therefore I would quickly learn it. However, there is an inheritance concept in it which means that I can overwrite only specific blocks within a template, customizing and also keeping the changes at a minimum.

# Extensions of the Project

## 1. Implementing a registry of SunPy Affiliated packages

I will implement this extension since I find it necessary. I analyzed Astropy.org and I will apply a similar kind of structure.

## 2. Move away from Jekyll to a Python based static site generator.

I will use Python based static site generator Sphinx for the entire project.

## 3. Write a sphinx extension that maintains an up to date list on the main website of the instruments and data products supported by the sunpy library.

I do not have any experience with Sphinx extension building, but I am familiar with JSON parsing in Javascript. Hence, I will follow the [documentation](#) to develop the extension.

## 4. Improve the content of the SunPy website.

It would be best to enrich the content of the SunPy website starting with the blog section. I will do my best to improve it and keep it up-to-date.

# Timeline

I will be devoting around 30-35 hours per week to the project. Apart from this, I will write weekly blog posts that show the development process of the project, and encourage developers to contribute to open source projects. I do not have any other summer internship or job so I will be able to spend my full time on the project.

Time Frame	Start Date	End Date	Task
Community Bonding	May 4	May 29	Meeting with mentors and community. Talk about the design, expected results, and get the requirements. Start designing some sample mockups, show them to the mentors, and make multiple revisions on it until they are approved. Become familiar with the tools and packages that will be used.
	May 30	June 6	Get started with the website design. Create the designs of each sections and also the responsive layouts of each. <b>Note:</b> I will have my final exams during May 25-June 4 but I will do my best to deliver the designs and I guess there will not be any problem.
Blog Post			1 blog post on starting my journey for GSoC 2017 and designing the SunPy website.
	June 7	June 25	Create a Sphinx theme. Code all the sections of the website such as about, blog, gallery, and contribute. Make the whole theme material using material components framework.
	June 26	June 28	Improve the website code, improve the contents, and prepare the website to submit for the Phase 1 Evaluation.
Blog Post			1 blog post on the development process of the Sphinx website theme and how I finalized it.
Phase 1 Evaluation		June 30	

Time Frame	Start Date	End Date	Task
	June 30	July 13	Start coding the Sphinx theme for documentation. Fix all the mistakes in the documentation. <b>Note:</b> I will be graduated from the university this year (Yay!) and I will attend the graduation ceremony, and also the party in July 4-5. During these days, I will not be completely available, but I will turn back to my work really quickly !
Blog Post			1 blog post on the development process.
	July 14	July 21	Continue to the implementation of the documentation theme.
	July 22	Jul 27	Become familiar with Sphinx extension development and start implementing the extension that maintains an up to date list on the main website of the instruments and data products supported by the SunPy library. Prepare the documentation section to submit for the Phase 2 Evaluation.
Blog Post			1 blog post on the development process of the Sphinx documentation.
Phase 2 Evaluation		Jul 28	

Time Frame	Start Date	End Date	Task
	July 28	Aug 4	Continue to the development of the extension.
	Aug 5	Aug 11	Implement the registry of SunPy affiliated packages and include it as a section in the home page.
Blog Post			1 blog post on the development process of the Sphinx extension.

	Aug 12	Aug 17	Continue to the development of the registry of SunPy affiliated packages.
	Aug 18	Aug 20	Write a documentation for all previous work done. Improve all the code, make tests, and get ready for the final evaluation.
<b>Blog Post</b>			1 blog post on my journey in Open Astronomy and as a GSoC student.
<b>Final Evaluation</b>		<b>Aug 21</b>	
<b>After GSoC</b>			Keep contacting with my mentors, send PRs to SunPy !

## Student Background

I am a Senior Undergraduate Computer Engineering student who is studying at Izmir University of Economics.

I really want to work with Open Astronomy and I think that I have the required skills to handle the project. I always wanted to contribute to an astronomy project.

I am a freelancer web and mobile developer, and also an experienced designer for 3 years. I worked on fiverr.com for 1 year as a UI/UX designer and designed several apps. Moreover, I involved in many projects, tech startups, and also I have my own startup. I am also a passionate entrepreneur and a fellow in Endeavour Turkey.

I am very familiar with web technologies, frameworks and I have a desire following new trends. In addition, I am comfortable with teamwork, and I have adequate experience with distributed development. I attend to conferences, seminars about programming regularly. I was one of the organizers of Google's Global Game Jam in 2015.

Six months ago, I attended Space Camp Turkey and got a certification. I always love astronomy related things since my childhood and being a part of the Open Astronomy community would be an honour for me.

## Projects

### Mobile Projects

- [Backpackers](#): Backpackers is a challenge based platform where all travelers can ask questions and give answers. (It is a test app for Yoloo)
- [Wress](#): Wress is an app which provides static location and weather info to users.
- [Yoloo \(in development\)](#): Yoloo is a social portal which allows travelers ask questions about accommodation, transportation, currency, food, budget, and places to visit. In addition, travelers can comment on questions, thus, they can share experiences.

### Web Projects

- [MasterHope \(SE 480 Course Project\)](#): A group project for the Javascript course.

- [Vega Ambalaj](#): Redesigned company page.
- [Hayrettin Çelikhisar Personal Web Page](#): A tech blog for the head of Embriyonix Incubation Centre.
- [Yoloo App Landing Page](#): A landing page for my startup Yoloo.

## Design Projects

- [Fitlancer App](#): A mobile application design for finding personal trainers that is currently available on [Google Play](#).
- [Yoloo App](#): My startup that is currently on beta.
- [Nearly App](#): A matchmaking application design.
- [Basket Builder](#): A finance desktop app design.
- [CharityPoll](#): A poll screen for a charity app.
- [Backpackers](#): A mobile app that has a challenge based platform where all travelers can ask questions and give answers.

## GSoC

**Have you participated previously in GSoC? When? With which project ?**

I have not participated in GSoC before.

**Are you also applying to other projects?**

No, I am only applying to this project.

## My Contribution to SunPy

### Pull Requests

- A bunch of PRs to improve site UX with fixes [#73](#)
  - Commit [625fae5](#) : Added Windows support for local dev and updated dependencies.
  - Commit [78b0d4a](#) : Updated Bootstrap to v3.3.7.
  - Commit [2a2a028](#) : Fix extra margin and y-overflow problem in menu for mobile screens.
  - Commit [1905cfd](#) : Fix missing '/' for assets. In local environment urls are broken without '/'.
  - Commit [945ba9f](#) : Update font-size and line-height.
  - Commit [c6068e2](#) : Fixed a x-overflow bug in menu.
  - Commit [e4dd0c0](#) : Sidebar item paddings are too small to be clicked in mobile. 8px top and bottom are good for UX.
  - Commit [2671c30](#) : Update html5shiv.js and respond.js
- Fixed format issue in mac.rst [#2058](#)

### Issues

- Broken link on github page : [#2057](#)

## Blog

I created a blog post about why I am interested in this project: [@medium](#)