ADASS XXXIV

ASTRONOMICAL DATA ANALYSIS SOFTWARE & SYSTEMS XXXIV

L-Università ta' Malta

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Contents

Tutorial 1: Programming the GPU on your laptop – is it easy, is it useful?

Location: Aula Magna

This tutorial is aimed at ADASS attendees who may have sat through numerous talks about how GPUs make everything faster, wondered about making use of their GPUs to speed up compute tasks, and then somehow never found the time to try it. The aim is to give people who have no experience with GPU programming a kick-start towards trying it for themselves on their own laptops. The tutorial will be based around a small set of example C++ command line programs that perform calculations on 2D data, all of which run on MacOS, Linux and Windows. Attendees will be able to build, run, modify, and experiment with these programs, seeing how the GPU performance compares with the CPU. These instructions describe how to download and build these example programs.

You can download the full tutorial instructions for MacOS and Linux here.
You can download the full tutorial instructions for Windows here.

Tutorial 2: The first step when thinking about User Experience: Set-up an UX Vision

Location: Aula Prima

For this tutorial, we will be using Miro Boards, so it's essential to have a computer with a stable internet connection and a Miro account. If you don't have one yet, creating a Miro account is free and only takes a few minutes. All the presentation materials and exercise slides will be accessible directly through the Miro board at {https://miro.com/app/board/uXjVNNlE8Ok=/}. Throughout the session, we'll be working on three different templates, where participants can add sticky notes and use the Miro wireframe library to visualize and create the necessary artifacts. The collaborative features of Miro will allow us to brainstorm and develop ideas together in real time.

Exercise 1: Group formation instructions
Each group should consist of 4 or more members + Team name. If there are extra participants, some groups may have more members, and some roles can be shared. The roles are: User, Designer, Product Owner and Project Member. Introduce yourselves and have coffee!

Exercise 2: Create Persona and User Story Map instructions

Persona
Creating personas and setting clear goals are essential steps in user-centred design, helping to ensure that the product or service meets the needs of its intended users.

A persona is a fictional, yet realistic, representation of your target user. It's based on research, such as interviews, surveys, or user data, and encapsulates the characteristics, behaviours, motivations, and pain points of a specific user group

User Story Map
It maps out user activities, tasks, and goals in a structured format, helping teams to see the big picture while prioritizing work for development. We will provide an example + template and further instruction during the presentation.

Exercise 3: Create User Journey Map
A powerful visual tool that outlines the complete experience a user has when interacting with a product, service, or brand. It captures every touchpoint, emotion, and action a user takes, helping teams understand pain points, motivations, and opportunities for improvement. Also for this exercise we will provide examples and templates to create the user journey map."

Tutorial 3: Processing and analyzing XMM-Newton data with ESA Datalabs: A collaborative approach

Location: Aula Magna

NOTE: Attendees for this tutorial will need an account on ESA Datalabs (https://datalabs.esa.int/).

As mentioned on the main webpage, ESA Datalabs is currently available as a "Public Moderated Beta". We recommend that XMM-Newton tutorial attendees who wish to participate in the hands-on session send an email to "aitor.ibarra@ext.esa.int" before the conference begins, so we can coordinate registration and access to ESA Datalabs in advance.

The XMM-Newton Science Analysis System (SAS) is already available in ESA Datalab, and during the tutorial, we will instantiate the SAS DataLab image. This image contains all the necessary software and calibration files to process and analyze XMM-Newton X-ray data.

The SAS DataLab already includes the SAS Jupyter notebook threads that we will be using during the tutorial. However, if attendees would like to further explore XMM-Newton processing capabilities, the Jupyter notebook SAS threads are available at the following link: https://www.cosmos.esa.int/web/xmm-newton/sas-threads.

Tutorial 4: The Advanced Scientific Data Format (ASDF)

Location: Aula Prima

The Advanced Scientific Data Format (ASDF) tutorial consists of notebooks which run in a custom conda environment. The repository with the notebooks is located at

https://github.com/asdf-format/asdf-adass2024

To install the software necessary to run the notebooks, clone the repository or download a zipped version of it. The installation script is in the 00_install directory. It uses conda to create a new environment called "adass-asdf" and install the required packages.

```
conda env create --file 00_install/environment.yml
```

For more information, check the README in the repository or drop a message in the ASDF c hannel on the ADSSS 2024 Slack.