Progress Report

Ria Mundhra rm2060@cam.ac.uk

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Title: Developing a Graphical User Interface for Econometric Analysis
Supervisor: David Khachaturov
Director of Studies: Dmitrij Szamozvancev
Project Checkers: Hatice Gunes, Neel Krishnaswami

Work Completed

I have written two user profiles/personas, based on informal conversations with experts in the field and undergraduates studying Economics. I used these personas as the baseline for developing a user requirements document and wireframe for my GUI. The user requirements document includes both functional and non-functional

The core Graphical User Interface (GUI) has been designed, implemented, and tested. The GUI currently supports importing and exporting data in .csv and .xlsx formats and modelling single linear, single logarithmic, single polynomial and multiple linear regressions. The colour and size/shape of the regression graphs is customisable.
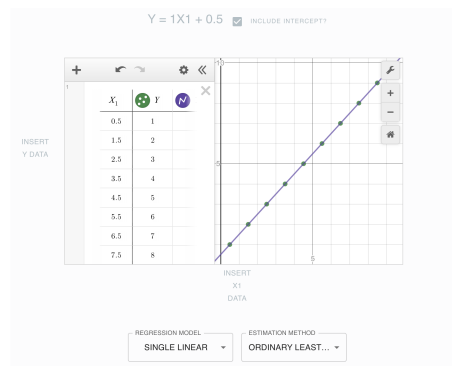

Figure 1: Regression Model

Additionally, for multiple regression, I have included the option of using principle component analysis (PCA) to reduce the dimensionality of the regression model, in order to make it easier to visualise on a graph.

Figure 2: PCA for multiple regression models

The GUI also allows full projects or parts of projects to be saved as templates and entire projects to be exported as PDFs. The Wilkinsons tests have been implemented and tested in the GUI, and further tests for the templating and import/export functionality have been written.

Documentation for the core user facing functionality of the GUI has been written. This highlights how one would go about building a basic workflow in the GUI, all options available for regression models, and the expected formats for data imports and exports where applicable.

I am currently working on extending the GUI to support network graph visualisation, including running clustering and centrality algorithms on the network graph. While the basic network graph module is functional, testing and integration into the rest of the GUI is a work in progress.

Figure 3: Network Graph

I am also working on building the application into a single executable file for distribution.

Timetable and Work Plan

The project is 3 weeks ahead of schedule. No unexpected difficulties have been encountered as of yet.