

Data Visualization

Group Project 2 - Group Y

**Tech Careers in Portugal**

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1. **Dataset description**

We used a dataset provided by Landing.Jobs, entitled “Tech Careers Survey PT 2021”. The dataset was built based upon a survey made online with tech workers in Portugal. That´s especially interesting for us, who will soon enter the market, most for jobs in the tech industry.

Data is anonymized, so we can delve deep into specifics such as salaries by age, experience, and field of work. It´s possible to understand how the companies keep their employees happy with perks and benefits, how those benefits are perceived and valued by workers. But also understand disparities in salaries, be it by region, gender, or company type.

The dataset is presented in an Excel file, that has 3371 rows (respondents). Data was well organized, and just some filtering was necessary to generate graphs where some rows had missing values. Besides that, there was some focus on pre-processing some of the sectors presented in the records since most of them had very large strings associated, for instance, “Software as a service (Saas) Development” and therefore since users that are mostly interested in this dashboard can relate to “SaaS Dev.” when referring to a sector within the technology industry, procedures were performed to shorten most of the names.

**2. Inspiration for this work**

For many of us, now at almost the end of the classes for our Master’s, it is time to start applying for internship and job interviews. To help our colleagues to make informed decisions, data is the way to go! The visualizations presented in the dashboard have clear and updated information regarding the market we are about to enter.

Additionally, we understand that having a clear notion of the benefits associated to a specific job role as well as to understand the overall profile of future co-workers within a field helps people stay motivated to pursue very competitive jobs in the world of technology.

**3. Type of interactions**

The dashboard provides an interactive platform for understanding how are the different aspects of the job market for tech workers in Portugal as a whole and for the different roles within the Technology Industry specifically.

Through implementing an interactive dropdown list, that allows to select the type of job the user is interested and recommends job roles with similar names, of all the roles possible to fill in the Tech Industry in Portugal, it becomes easy to have both a whole picture of the job market within this industry and the true aspects of a specific position the user is either working in or trying to have a chance in the future.

Beyond that, we have a variety of graphics that present good interaction through zoom in and zoom out features and hover features. Furthermore, by clicking and double clicking at the some shapes within graphs, like in the *treemap* presented at the bottom of the website, you can drill down on specifics inside some visualizations, thanks to upscaling *Plotly’s* interactivity.

**4. Technical aspects**

Based on the practical classes we had along the semester, we were able to build a *dash* app, that was uploaded to *GitHub*. The code of the dash app is available at the *GitHub*´s link at the references.

In order to create this dashboard a variety of HTML containers were created within our python script, using both style parameters and CSS files to generate the user design final result.

From *GitHub*, we connected our *dash* flask app to *Heroku*, where it is live and can be accessed via the link <https://tech-jobs-in-portugal.herokuapp.com/>.

**5. Discussion**

Developing the visualizations on *plotly* was the easiest part. We encountered a lot of doubts on building the *dash* app. Because to build the app we had to deal with *wrappers* of HTML, which we are not used to (we didn´t had any classes on it so far, and nobody on the team had ever worked with it), we spent a lot of time fine tuning the layout of the dashboard.

We had implemented a second type of interactivity (filtering by gender using checkboxes) but thought it would not make a lot of sense for the end user, so we dropped it.

In the end we have a functional, clean, and useful dashboard to anyone looking for the Technology Industry job market.

**6. References**

Link to the original dataset: <https://wp.landing.jobs/techcareersreport2021>

Link to the *dash* flask app: <https://github.com/vbussolaro/Tech-Career-Report-2021>

Link to *Heroku* app (live dashboard): <https://tech-jobs-in-portugal.herokuapp.com/>

Dash Documentation and User guide: <https://dash.plotly.com/>