

SKILLS AUDIT

Weighted for totals:

- \$25 for Core two degrees of separation*
- \$20 for visualizing further degrees of separation*
- \$10 for requesting further information on specific individuals*
- \$20 for adding and removing members of the core team*
- \$15 for filtering by specific researchers and publications*
- \$10 for filtering by specific topics*

Skills required

Creating a web app front end with REACT:

Visualizing two degrees of separation for the front end:

- HTML and JS to create nodes and be able to find degrees of separation
- knowledge of REACT framework
- knowledge of REST api
- Knowledge of frontend data visualization frameworks such as D3.js
- filter and visually represent the database as a network map.

Creating an intuitive UI experience for people who are not tech savvy:

- REACT bootstrap

Creating a web app backend with FLASK:

Backend to communicate with frontend:

- knowledge of REST API
- knowledge of Object oriented database model
- familiarity of Flask-Alembic for migrations
- Fluency in Python
- add functionality for the application to filters to the database carrying through to the network

Creating a SQL/SQLALCHEMY database with migrations:

Scraping data from Excel sheets and migrating to SQL database:

- Create an algorithm to convert a database (structure TBD) into a basic network-structure

Knowledge of data structures, graph theory and graph algorithms:

- graph traversals algorithm
- complexity analysis

Familiarity with scopus and pubmed apis:

- liaise with pubmed and scopus through their existing API, to determine the existing co-contributors of any relevant parties.

Familiarity with Agile methodology and scrum**Proficiency with github****Skills the team has:****Graph theory, Data structures and algorithms, Github:**

- callum
- maaz
- Harry
- cameron
- Kane
- Adam

Agile methodology, FLASK and SQL-Alchemy::

- Kane
- Maaz
- callum
- harry
- cameron

Relational databases:

- Maaz
- Harry
- Cameron
- Callum
- Kane

Javascript and Python:

- callum
- maaz
- Harry
- cameron
- Kane
- Adam

Familiarity with REACT and typescript (rudimentary):

- Kane
- Maaz
- Cameron

Skills the team needs:

Familiarity with scopus and pubmed apis
Data scraping from scopus and pubmed
Knowledge of D3.js
Knowledge of REACT

Resources

Scopus API:

https://www.elsevier.com/_data/assets/pdf_file/0007/917179/Scopus-User-Community-Germany-API-final.pdf

<https://johnmuschelli.com/rscopus/>

Pubmed API:

[http://cran.nexr.com/web/packages/easyPubMed/vignettes/easyPM_vignette_html.html#:~:text=Extracting%20Affiliation%20data%20from%20a%20single%20PubMed%20record&text=Affiliations%20or%20other%20fields%20of.and%20substring%20extraction%20\(substr\).](http://cran.nexr.com/web/packages/easyPubMed/vignettes/easyPM_vignette_html.html#:~:text=Extracting%20Affiliation%20data%20from%20a%20single%20PubMed%20record&text=Affiliations%20or%20other%20fields%20of.and%20substring%20extraction%20(substr).)

<https://libguides.ucmerced.edu/pubmed/api>

REACT:

<https://reactjs.org/docs/create-a-new-react-app.html>

<https://blog.miguelgrinberg.com/post/how-to-create-a-react-flask-project>

<https://developer.okta.com/blog/2018/12/20/crud-app-with-python-flask-react>

D3.js:

<https://d3js.org/>

<https://blog.bitsrc.io/real-time-visualization-with-react-and-d3-js-6ee29e36acb6>

<https://www.youtube.com/watch?v=gKgWGpvn0W4>

<https://d3-graph-gallery.com/network>