COVID-19 Hospital Visualization

By Caleb Anderson, Nia Blake, Trent Gaylord, and Kobe Lawson-Chavanu
Team Humble

Caleb Anderson  Nia Blake  Trent Gaylord  Kobe Lawson

Mentors: La Keisha Barlow, & Charlie Dey
Data Set

- Hospital employee scheduling
- 12 hospitals in Austin TX area
- As necessary employees or PRN
- Needs and Fills
- Nurse specialties
- Spreadsheet

350 Staff Members
20 Roles
9 Nurse Specialties (ICU, ED, Mother and Baby, etc)
Project Goals

Data Visualization

Need Prediction

Front End GUI
Project Software
Google Cloud
- CSV Storage
- HPC Software

Jupyterlab
- Python Environment
- Markdown
- Runs in GC
Plotly
- Light graphing software
- Python library
- Runs in Jupyterlab & Anvil

Anvil
- Web app development
- Python Environment
- Uplink to Jupyterlab
Implementation
Code Overview:

- Normalize data
- Linear Regression
- Plotly graph
User Interface:

- Anvil links to Jupyter Notebook
- Calls primary function
  - Front end arguments -> Back end parameters
- Receives graphing data
- Graphs function w/ Plotly
Project Future
Project Impact:

- Predictions to better forecast needs with certain parameters
  - Based on site, specialty
- Atlanta Impact:
  - Similar hospital system

- 350 Staff Members
- 20 Roles
- 9 Nurse Specialties (ICU, ED, Mother and Baby, etc)
Future Plans

- Monthly heatmap
- Further Refine UI
- Messaging system
Credits & Resources

Github:

Special Thanks to:
Mentors: La Keisha Barlow & Charlie Dey
Event Organizers: Jeaime Powell & Gary Brantley
Sponsors: Cloudy Cluster, Intel, Omnibond, TACC, Globus and SGCI