

**Project Description:**

At **amplify**, we believe in the power of live music. Live music is energetic, collaborative, and unpredictable. Fans have a unique opportunity to connect intimately with artists they love, and artists can connect in the same way with their fans. There are few things as powerful and invigorating. **amplify** is inspired by our desire to bring artists and venues together to help live music flourish. Using **amplify**, venues can find artists who are well suited for their unique space and artists can find the right venues to attract their fans.

**amplify** was built using historical data from local music venues, as well as artist data from **Spotify®**. Machine learning models were trained on this data, allowing accurate predictions of ticket sales and revenue, taking into account various factors including artist popularity, venue size, fan demographics, and even the month and day of week of the show.

**Tech Stack:**

* Initial data cleaning was performed using Python (e.g., Pandas, Numpy, etc.)
* Data warehousing is handled using a SQLite database
* A Flask application is used to handle queries to the database and return data to be displayed on the dashboard
* The app front-end was designed using Bootstrap along with multiple JavaScript libraries, including jQuery and noUiSlider
* Modeling was conducted using SKLearn and statsmodels
* The finished app has been deployed on Heroku

**Team:**

* **Mike Bowen**: Mike is currently a Staff Researcher at Spotify. He is a quantitative research specialist and data storyteller with 15 years of experience designing and conducting research for many of the world’s most recognized brands.
* **Justin Coulter**: Justin is a former Artist/Fabricator turned Data Scientist, with a natural inclination towards unique perspectives and a proclivity for creative problem-solving.
* **Andrew Swellie**: Andy is a Data Science enthusiast with 12+ years of experience in Product Management and Business Development. He also has extensive experience with statistical testing and data analysis.
* **Robert Wood**: Bob is a Data Scientist with over a decade of quality management and continuous improvement experience. He has an eye for detail and a passion for problem-solving.

**Challenges:**

Our initial challenge came from a limited sample of show data (2 years, ~200 shows) to train and test our model. As we get new data from the Beachland Ballroom we will continue to train our model and improve our accuracy. We also had to deal with an overwhelming amount of Spotify artist data (almost 4M records). We had to balance that data with our app’s responsiveness so we limited the available artists to those with 500 or more streams in the last 30 days. This left us with a final database of 500k artists.

**Future Product Roadmap:**

The initial response from the Beachland Ballroom has been overwhelmingly positive. We plan to give them access to this tool right away so they can start using it to guide their booking decisions. As we move forward we want to tie the app to a dynamic SQL database that will update both show information as they occur (for our model) as well as real time Spotify data. We also want to scale the app to other venues and explore ways to monetize it either by subscription fees or via data aggregation.