Better Understanding Our Built Environment

Building an Architectural Styles Classifier

By: Gustavo Chavez

Beauty is in the way you live. Enjoy your surroundings and let them inspire you.

Plants

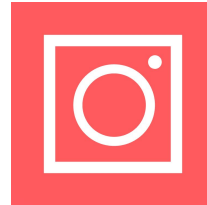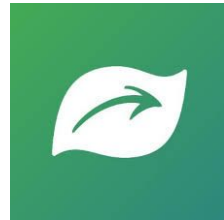**PlantSnap**
Where Nature and Technology Live in Harmony

Animals

Architecture?

There is no app that is currently able to identify a building's architectural style

iNaturalist

Art

SMARTIFY

The Need for Architectural Literacy

- We spend 87% of our lives within architecture*

- Understanding/Appreciating Architecture helps people relate to community**

- Architecture influences behavior***
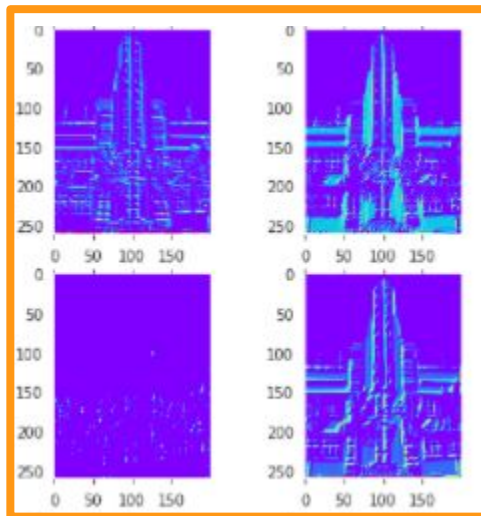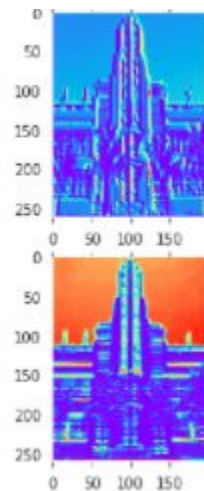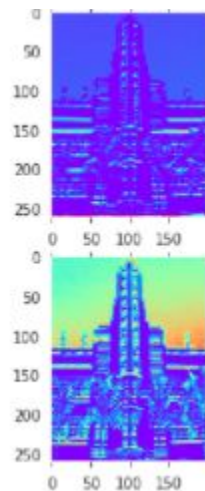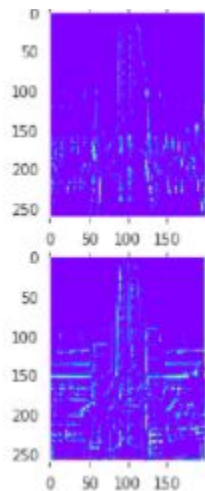
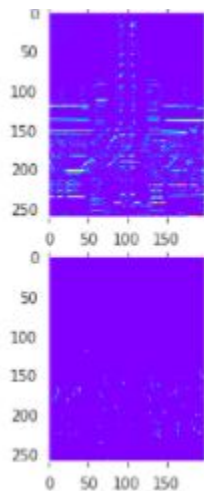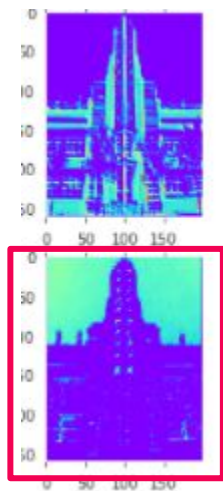*Source 1 in references   ***Source 3 in references
**Source 2 in references

Modeling

Convolutional Neural Network (CNN)

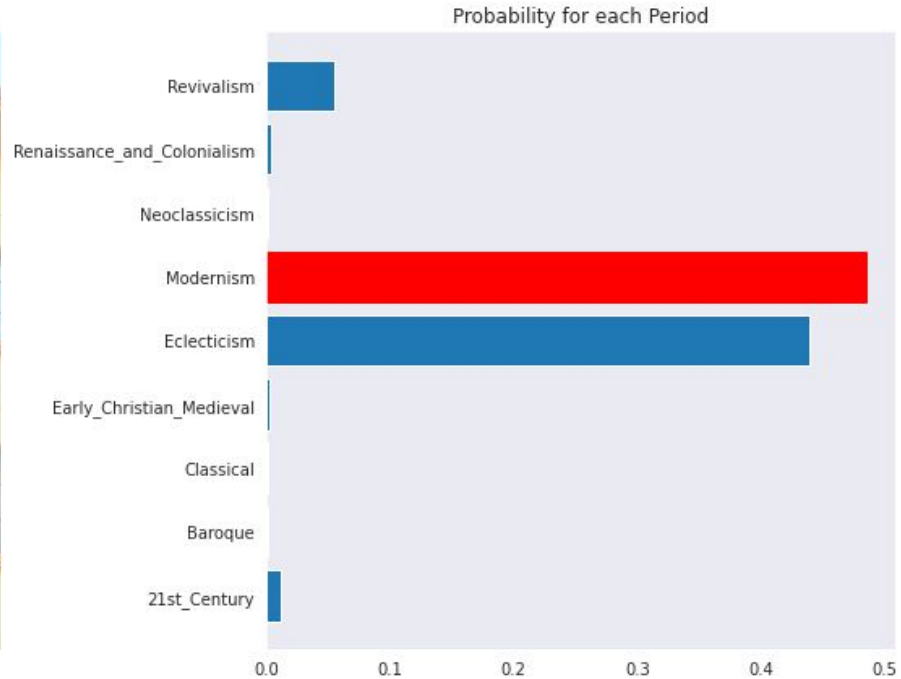# Model Produces New Images

Current Model Performance

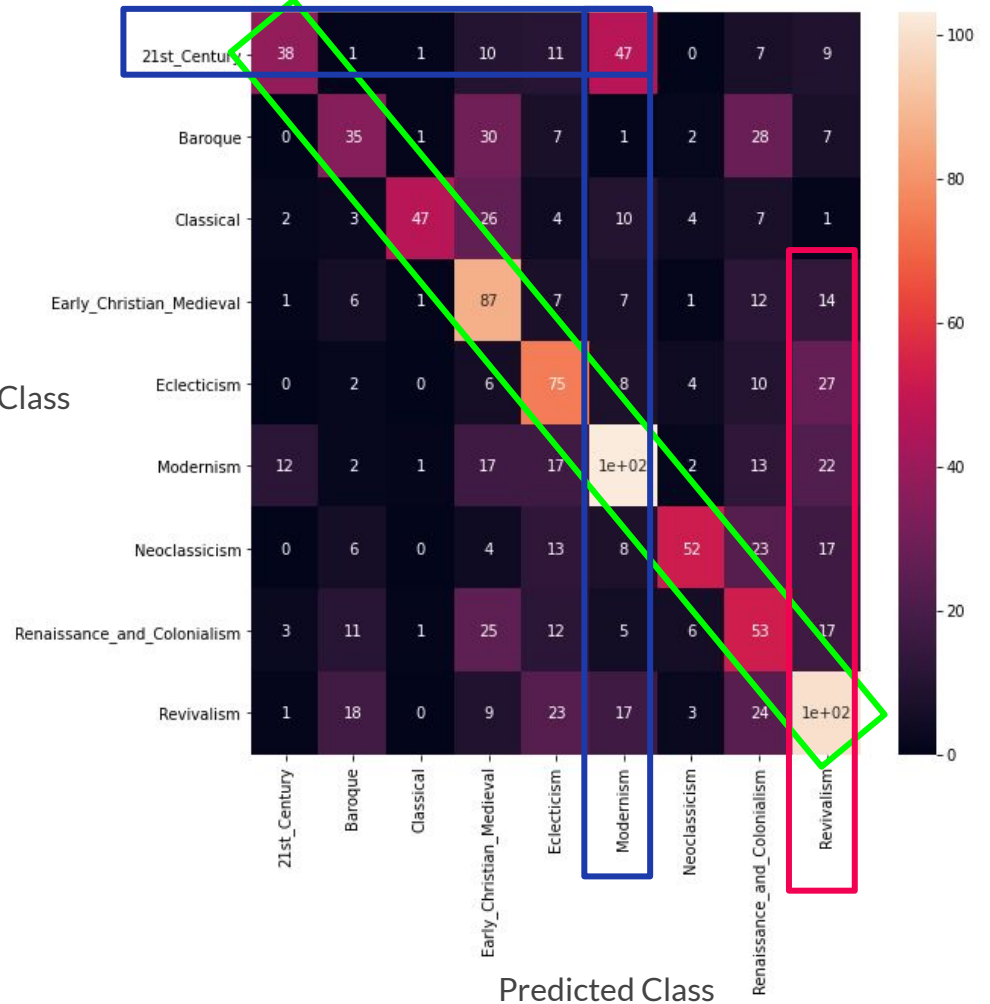Accuracy within top K features

80% Accuracy

47% Accuracy
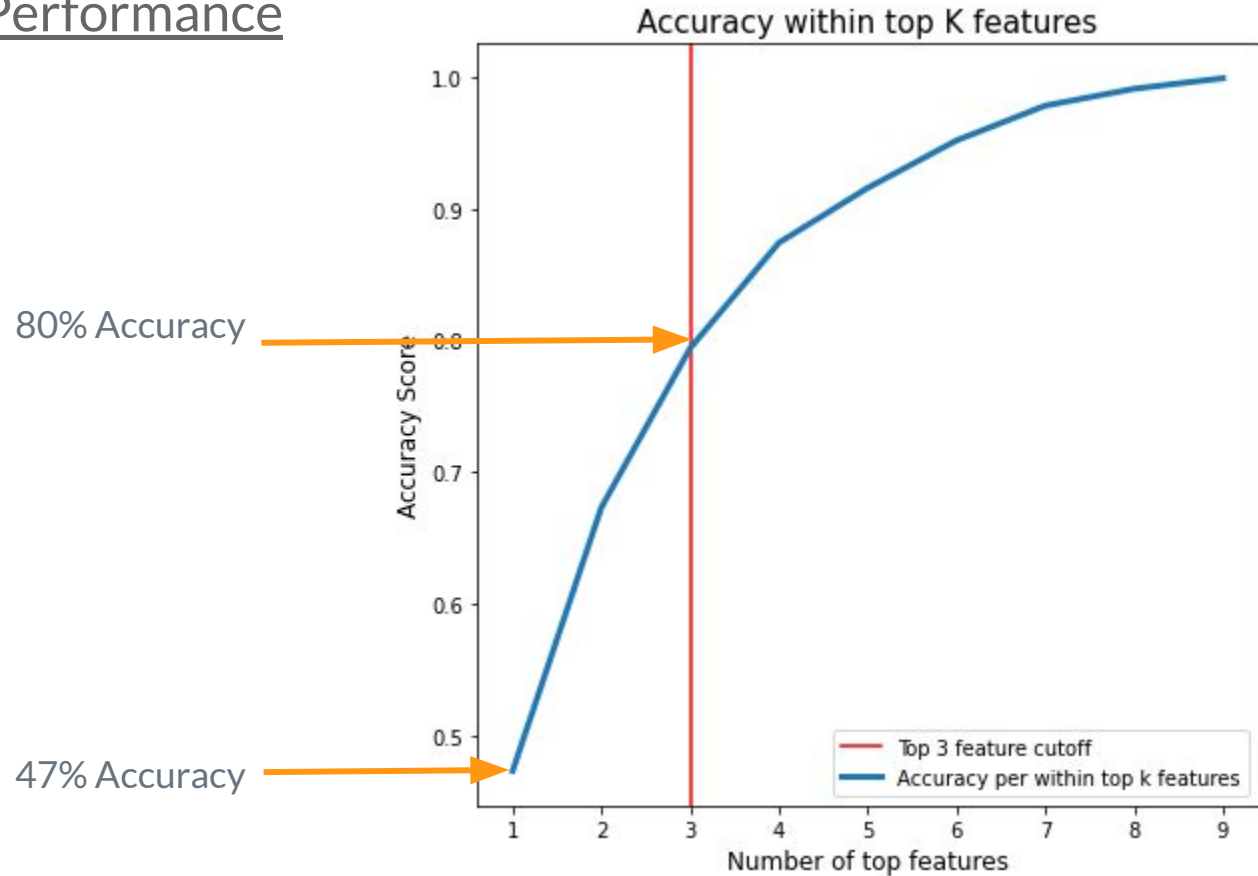
Current Model Performance

Heatmap of Predictions

- Misclassifications occur most often with adjacent time periods
- Periods with diverse styles often misclassified

True Class

Predicted Class

Recommendations for Architectural Style Classifier

- **Zillow & AirBnB**
  - Allow users to search by style
  - Allow users to get understanding of area
- **Schools**
  - Interactive learning
  - Student engagement with community

- **Identification App**
  - Increase City Tourism
  - New way to engage with surroundings

Future Work

▷ Increase Capacity to Gather Data

▷ Build Dash app to allow for Predictions

▷ Increase top-3 to 95+%

▷ Increase Problem Complexity

Thank You!

Thank you for watching

Special Thanks:
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Educational Coach Dara Paoletti
Fellow Flatiron School Cohort Members

References

1) [Nation Human Activity Pattern Survey](#)

2) [The Death and Life of Great American Cities by Jane Jacobs](#)

3) [How Architecture Affects Human Behavior](#)