Maximizing approved loan amount

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Outline

- Data Description

- Model

- Feature Importances

- Conclusions

Data Description

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Data Description

Kaggle, Home Credit Website

Data Size: 2.5 GB

Data Frames: 7

Columns:

- SK ID CURR: Arbitrary ID given to applicant
- AMT_CREDIT: Credit amount of the loan
- CODE_GENDER: Gender of client
- etc….

Target Variable: AMT_DIFF = Requested-Approved

Goal:

What factors will affect how much an individual is approved for based on their request?

Detail on how applicants can be approved for larger amounts than what was requested.

Model **2**

Model: Random Forest Regressor

- Target variable was not a classifier, but a continuous variable.

- Uses ensemble learning

- Constructs several decision trees during training

- Outputs the mean of the classes as the prediction of all the trees.
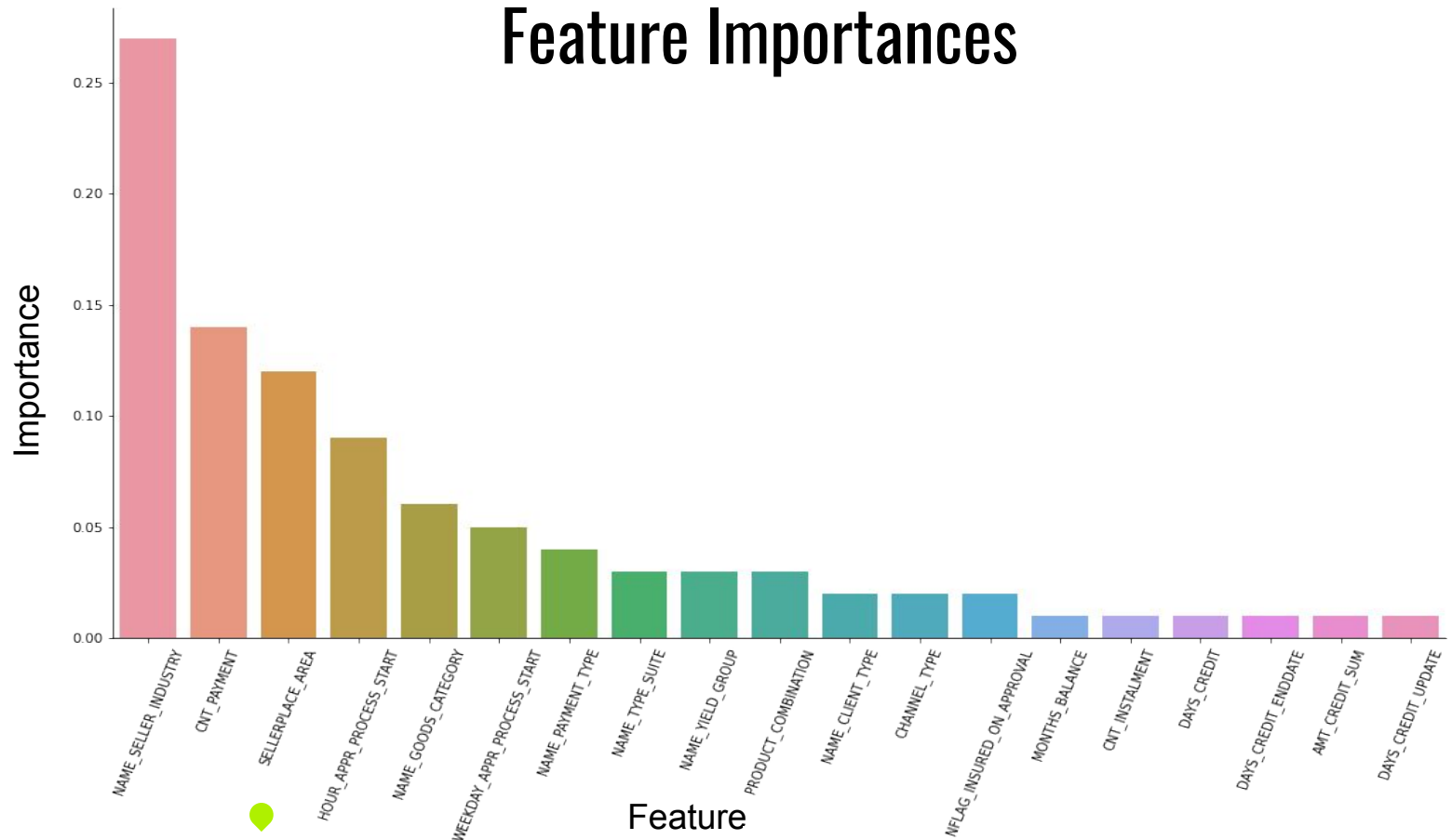
Model: Random Forest Regressor

Actual vs Fitted Values for Price

Accuracy: 99.7%

Mean Value Error: $47.75
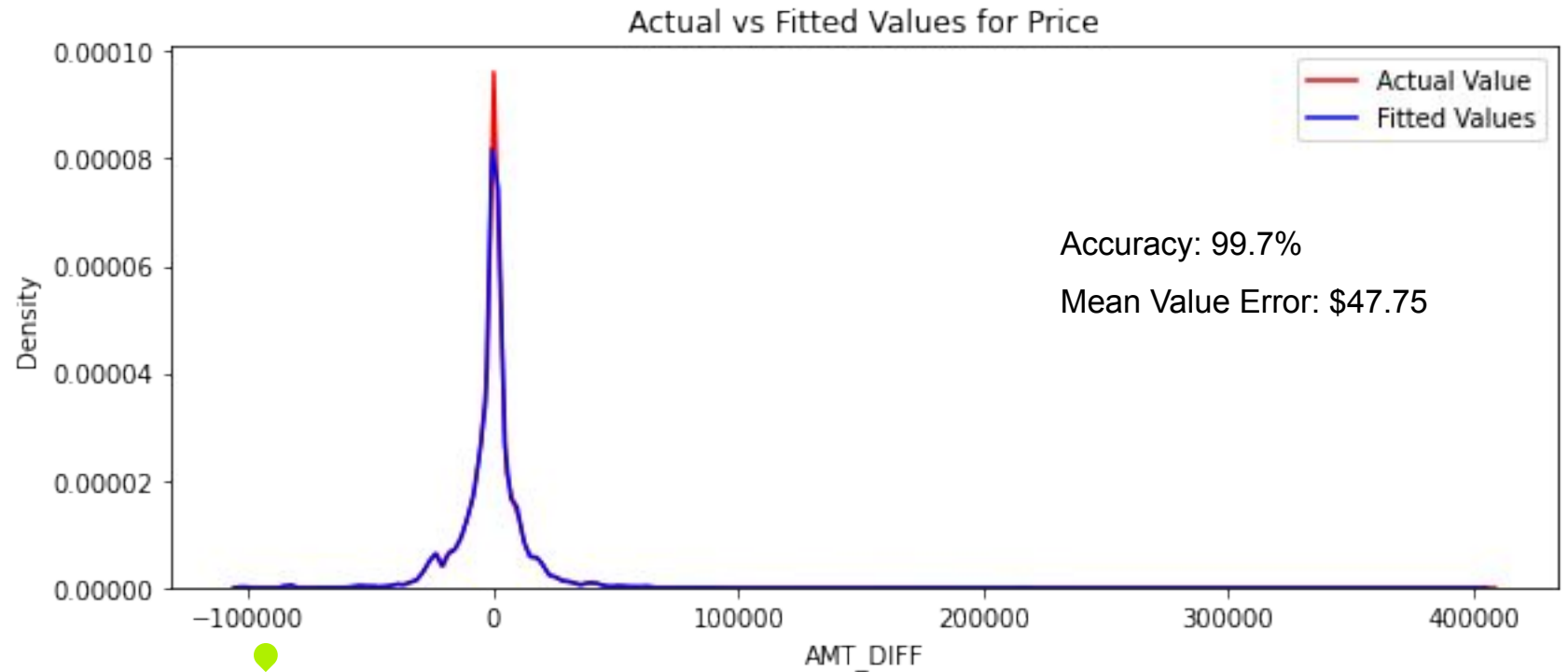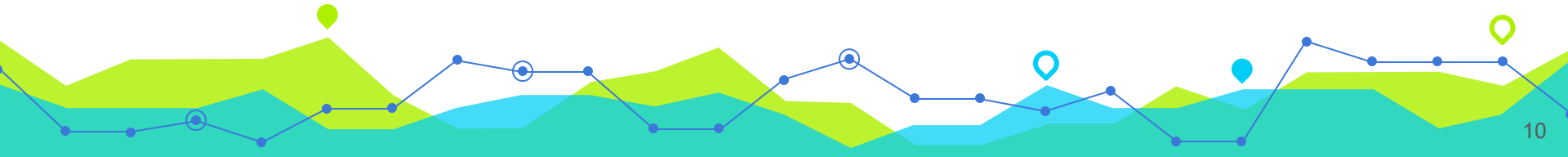
Feature Importances

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Feature Importances

Name Seller Industry

Purpose of the cash loan

Suggestions

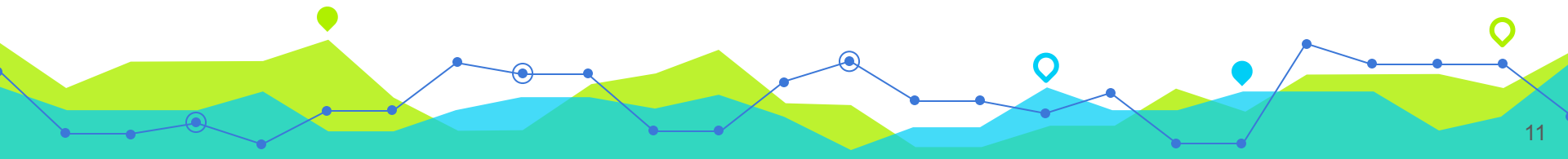- When applying for a loan, people who are going on vacation tend to be approved for more money.

Seller Place Area

Selling area of seller place of the previous application

Suggestions

● While the data is not arbitrary, the obscurity of the data renders it not currently viable for suggestions.

CNT Payment

The remaining payments the client has on previous credit

Suggestions

- If your remaining payments is at least 12 months on your previous credit, you tend to get approved for more money than what you applied for.
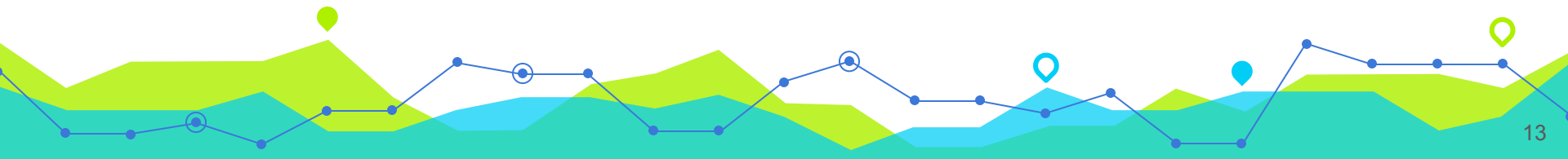
Hour Approval Process Start

Approximately what hour the client started the loan application.

Suggestions

- Apply at around 6am or 2pm to get approved for more money.
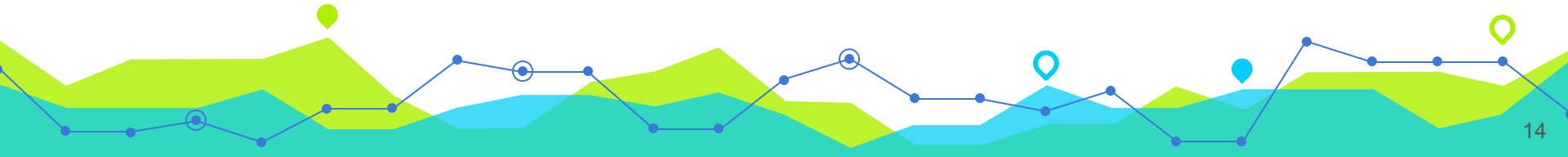- Avoid applying around 9pm or 10pm.

Name Good Category

What kind of goods did the client apply for in the previous application

Suggestions

- When applying for a loan, people with previous education loans tend to be approved for more money.
- However, people with previous vehicle loans tend to be approved for less money.
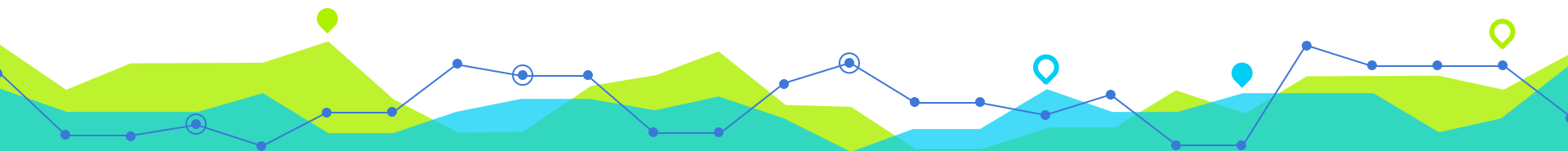
Weekday Approval Process Start

What day the client started the loan application

Suggestions

- Best days for applying are Mondays with about $1,300 offered above the initial application amount
- Worst days for applying are Saturdays with about $575 offered below the initial application amount

Conclusions

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Conclusions

- The purpose of your loan and when you apply for your loan often affect if you may be approved for more credit than initially applied for.

Warning: If you accept a loan for more than what you need, this is more money you will need to pay back WITH INTEREST.
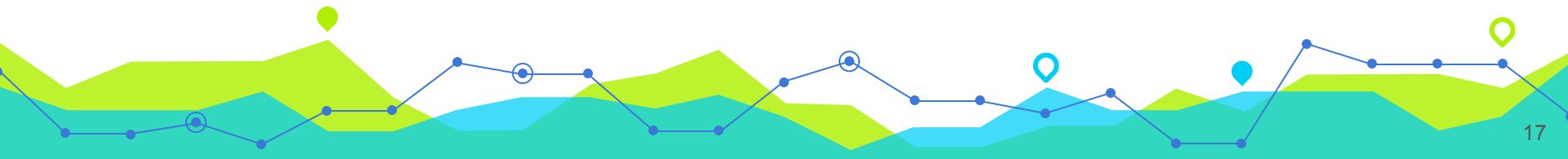
Future Possible Work

- Decode seller place area

- Findings new ways to analyze and model continuous data.

  - Random forest regressor tends to overfit

- Deeper analysis of other columns.

- Interactive model that allows clients to input their personal information.

- Running the model on larger sample.

Thank You

Any Questions?