Beta Presentation
Transaction Anomaly Detection

The Capstone Experience
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Project Overview

• Detect and alert users of anomalous transactions
  ▪ Fraud / account takeover
  ▪ Changes in recurring payments

• Provide visualization of member spending habits

• Implement anti-money laundering rules according to Bank Secrecy Act
  ▪ Stretch goal
System Architecture

- Amazon Web Services
- MySQL Database
- TensorFlow
- Python
- Keras
- Anomaly Detection Module
- Django Web Server
- RESTful API
- HTML GET request
  - JSON response
- Android
- iOS
- Member Web Portal
- Employee Web Portal
Android Member Account View

![Transaction History]

- **PLATINUM VISA**
- **Total Amount:** $271.83

**Transaction History**

- **SPEEDWAY 07190 776**: $13.24
- **CHIPOTLE 0931**: $4.72
- **TAVERN AND TAP**: $74.47
- **SPEEDWAY 07515 687**: $42.87
- **TARGET 00006163**: $30.95
- **HORROCKS FARM MARKET LA**: $18.93
- **SUBWAY 00072181**: $12.17
- **WESTSIDE COMMUNITY YMCA**: $37.00
- **MEIJER INC #194 Q01**: $101.86
- **FRANKS PRESS BOX**: $38.07
- **CANCUN MEXICAN GRILL**: $28.30
- **CHIPOTLE 0931**: $9.43
iOS Member Transaction View
Member Facing Web Portal

Transaction and Anomaly Monitoring

Account Summary

**Debit Card #4888882272342082 (Balance: $843.29)**

<table>
<thead>
<tr>
<th>Date</th>
<th>Acceptor</th>
<th>State</th>
<th>Post Amount</th>
</tr>
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<tbody>
<tr>
<td>9/9/2018</td>
<td>SPEEDWAY 07190 776</td>
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<td>13.24</td>
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<tr>
<td>9/9/2018</td>
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<td>MI</td>
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<td>9/8/2018</td>
<td>TAVERN AND TAP</td>
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<td>9/7/2018</td>
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<td>9/7/2018</td>
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<td>MI</td>
<td>30.95</td>
</tr>
</tbody>
</table>

Show more

**Credit Card #4888889295027111 (Balance: $2,423)**

<table>
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<td>8/14/2018</td>
<td>ARAMARK PIKES PEAK</td>
<td>CO</td>
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Employee Facing Web Portal
What’s left to do?

- Optimize fraud detection model
- Improve user interface
- Fix bugs with mobile applications
- Refine recurrent payment anomaly
Questions?