Our mission is to equip bold entrepreneurs to disrupt the status quo and to create meaningful change. MassChallenge is a non-profit organization dedicated to supporting innovation and entrepreneurship through collaboration and development. We have more than a decade of experience accelerating startups, industry, and innovation ecosystems. We work across sectors to drive a stronger future through collaborative innovation.

Innovating for Success: New Model to Predict the Success of Startup Applications to an Accelerator

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Summary

- Developed an application filtering model for estimating probability of a successful application in MassChallenge’s annual startup accelerator programs
- This will help reduce the likelihood of judge's receiving poor applications, giving them more time to give detailed feedback to applicants and helping to maintain positive relationships between MassChallenge and their partners.
- This is the first step (identification) in providing automatic feedback to applicants which will lead to better overall applications and a more equitable process since everyone will be able to get timely pre-judging feedback.

Motivation

Goal: Predict application success so that we can provide automated feedback to applicants. This will lead to better applications which will allow the judge’s to give better feedback leading to more successful startups.

Additional goals and restrictions:
- Model needs to be easily retrainable
- Deployed using AWS S3 and Lambda,
- Exclude features known to encode demographic biases (e.g. zip code)
- Both training and deployment need to be computationally inexpensive

Approach

Results

<table>
<thead>
<tr>
<th>metric</th>
<th>precision</th>
<th>recall</th>
<th>F1</th>
</tr>
</thead>
<tbody>
<tr>
<td>score</td>
<td>0.89</td>
<td>0.74</td>
<td>0.81</td>
</tr>
</tbody>
</table>

Future Directions

- Use the predictions to provide actionable feedback to applicants
- Expand the model to allow for predictions on one-off programs
- Improve model performance
- Increase model explainability

Industry Partner

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