ADVANCED ANOMALY DETECTION IN CANARY TESTING

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Advanced Deployment Methods

Advanced deployment methods - Multiple versions in product with split traffic

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Modern Code Deployment

Current App Version

95%

New App Version

Users

5%
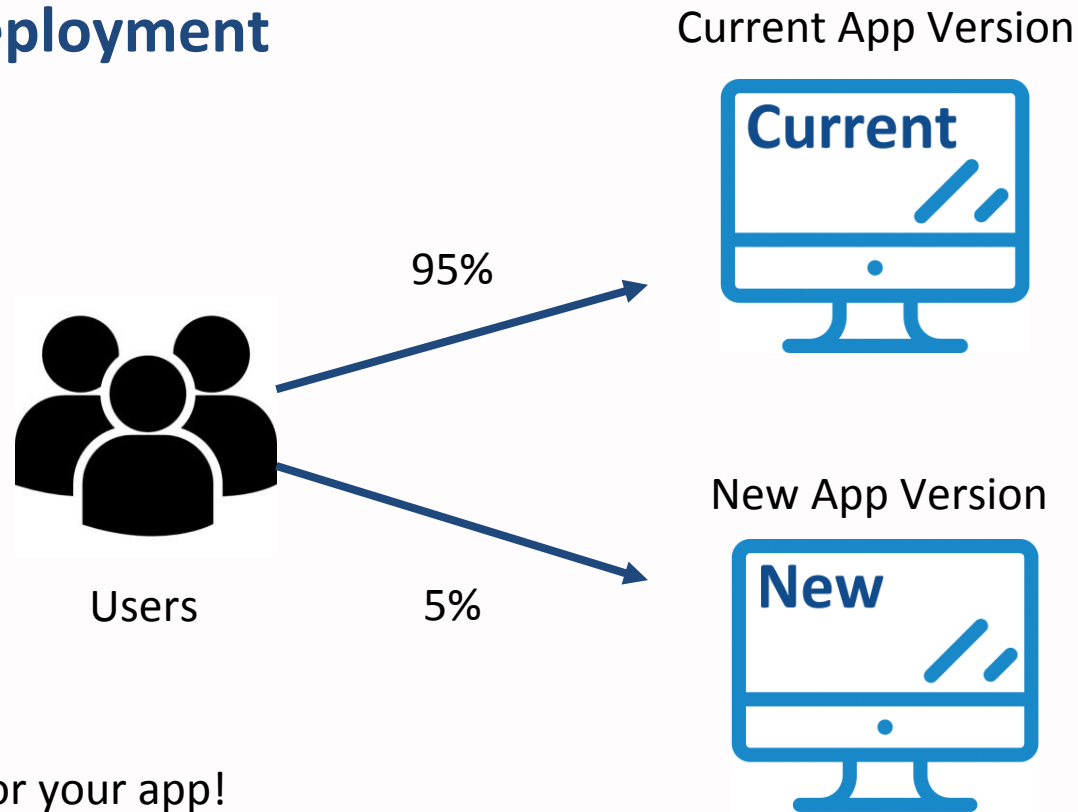
Users become the QA for your app!

Canary Testing Approach

Current App Version → Measure Behavior → Build User ML Model

New App Version ↔ Release To User Subset → Measure Behavior → Anomaly Detection → Good For Release?
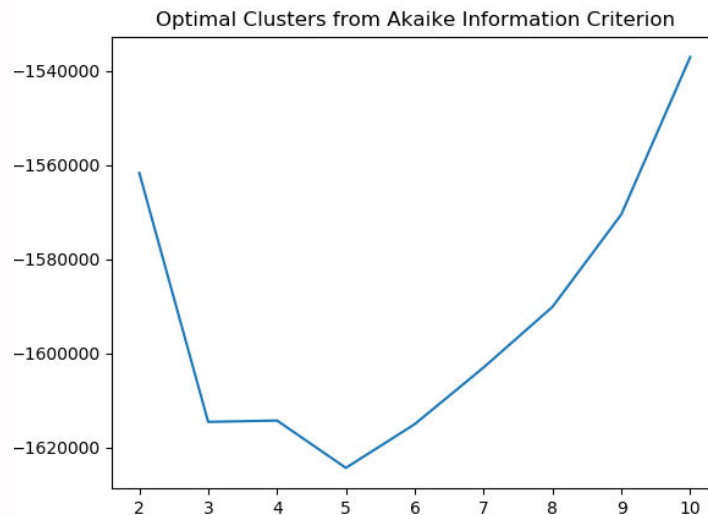
Release To All Users

Yes

No

Revise App

User Journeys
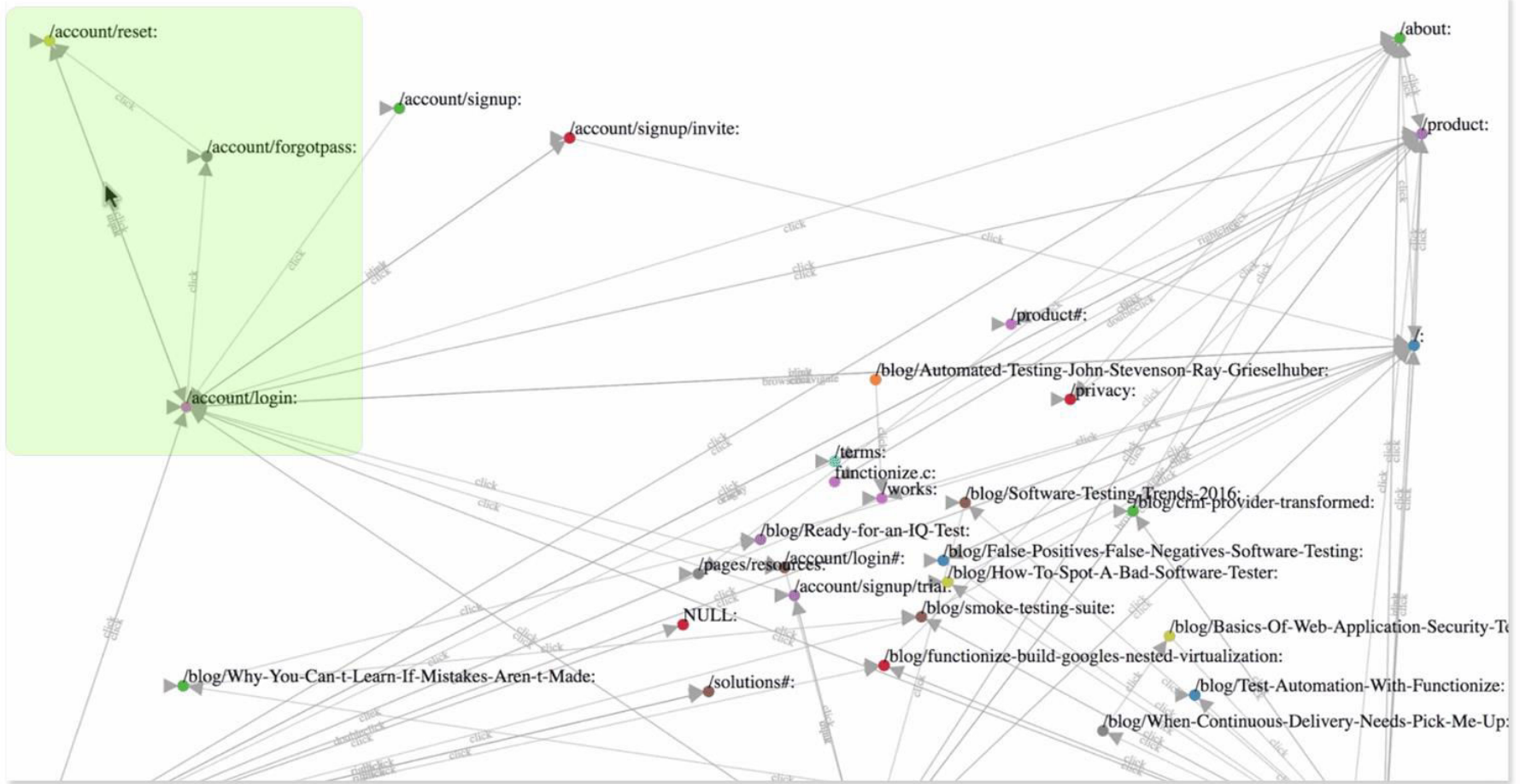
Experimental Method - Clustering

- Collected 10000 session and 150000 actions

Optimal Clusters from Akaike Information Criterion

6

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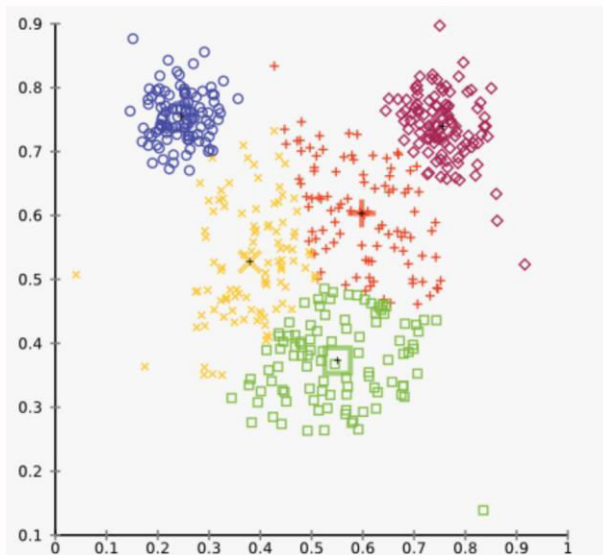
LSTM Model
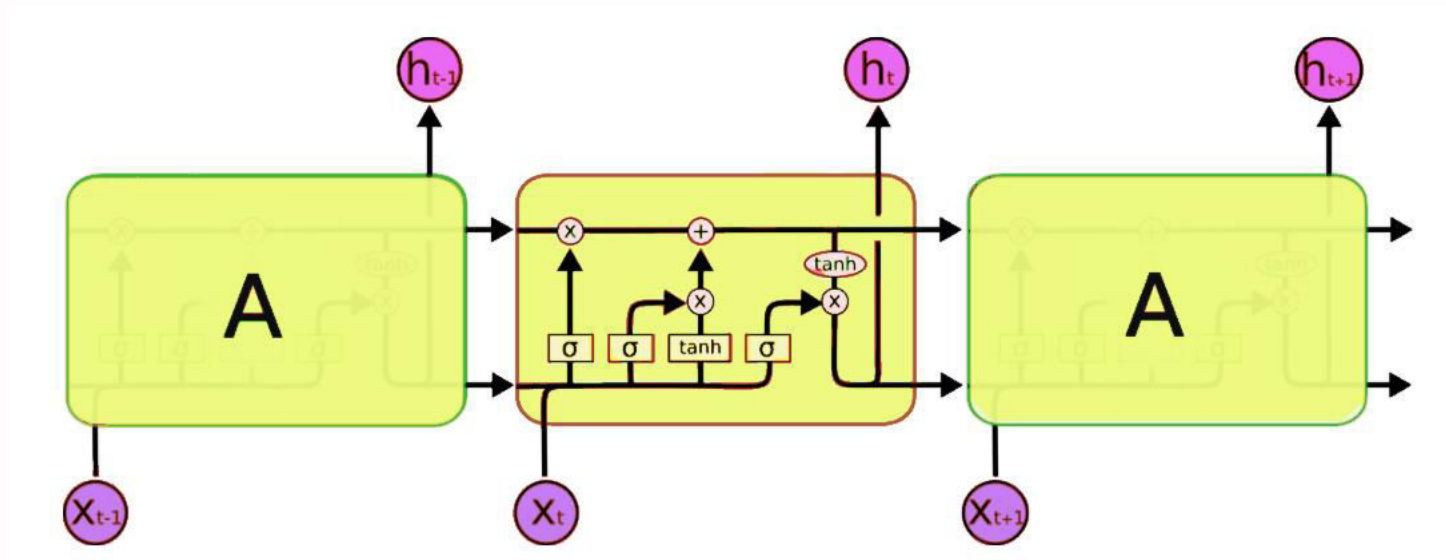
Source: Analytics Vidhya

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Hybrid Approach

EM

LSTM

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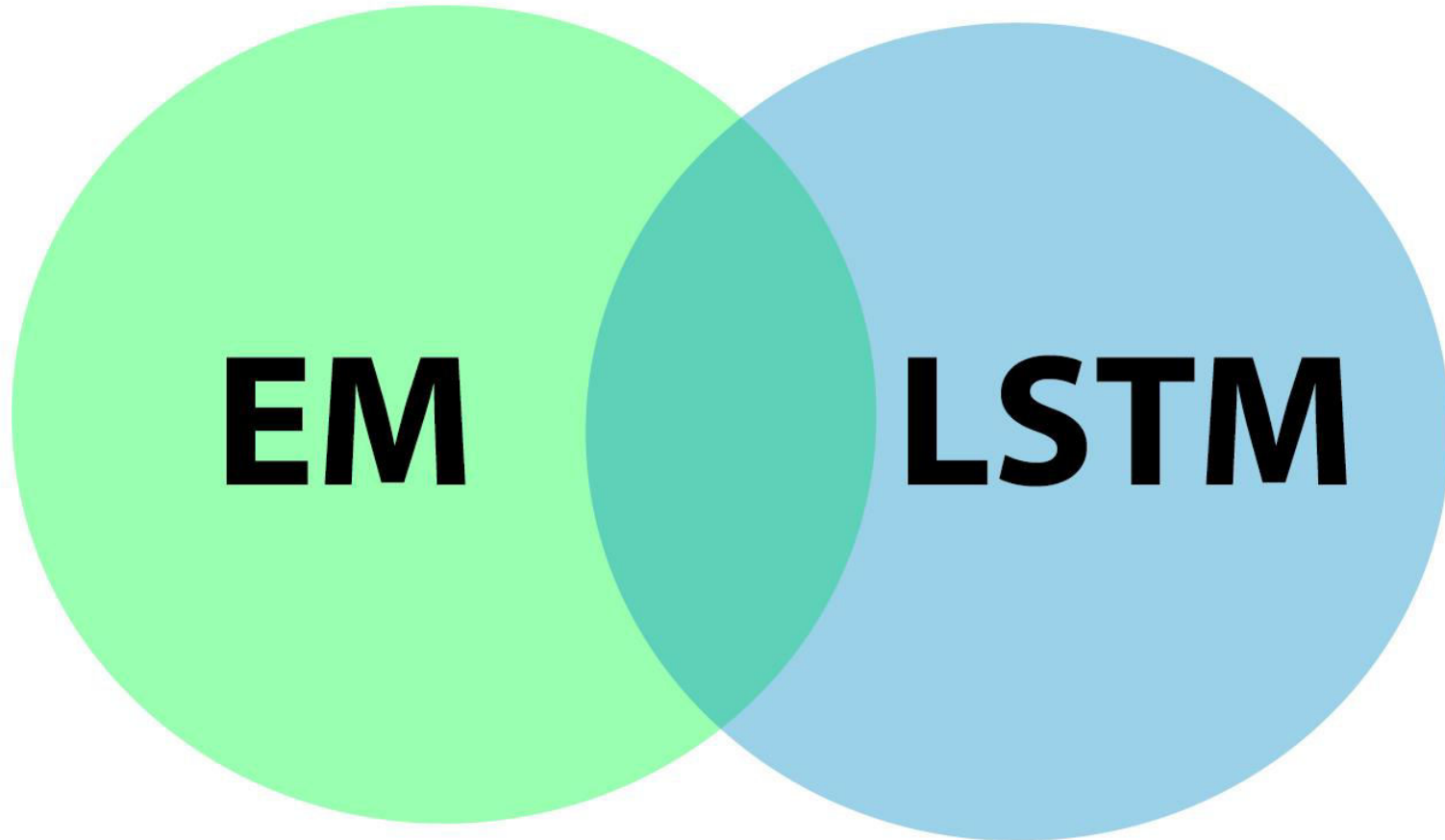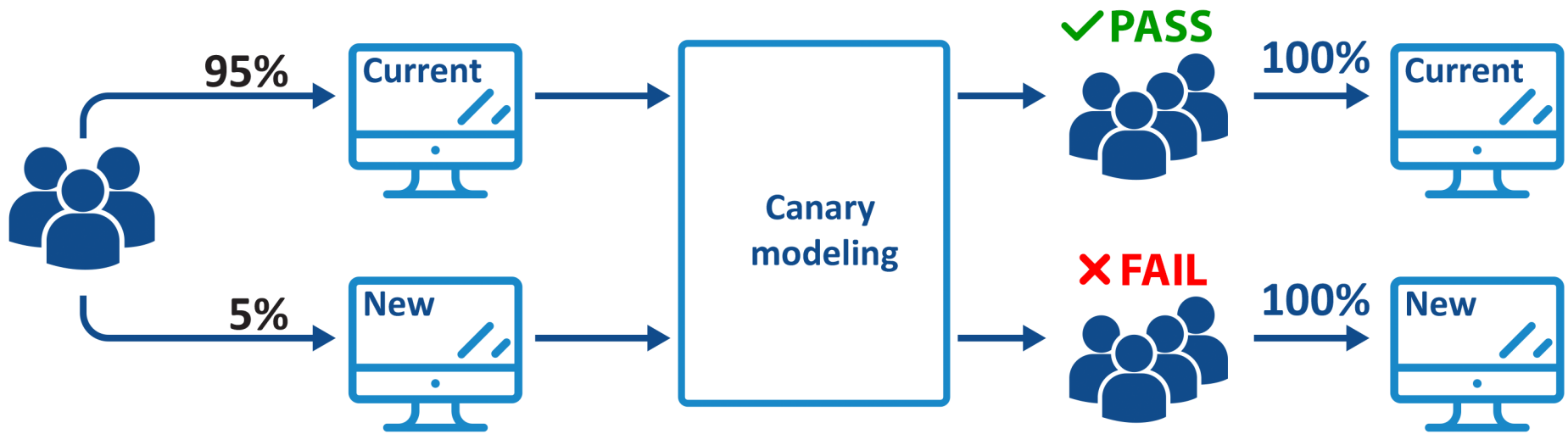
Process and Results

- Model trained on user data from live sites
- 10,000 user sessions were analyzed
- 80% of data used for training and 20% for testing
- Predicted the next user action 85% of the time
- Since there are hundreds of action/element combinations on a page, this is actually quite accurate

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Split Traffic and Canary Modeling

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Conclusion

- Successfully segmented sessions into 5 clusters based on similar behaviors
- 2% of sessions were identified as outliers
- Anomalous user sessions can be easily identified
- LSTM model can accurately predict probabilities of actions in a user session.
- This analysis can be used for gating releases and canary testing

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