Learning from Multi-User Activity Trails for B2B Ad Targeting

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B2B products

Business-to-business (B2B) versus business-to-consumer (B2C) *

Same advertiser can have B2B and B2C products *



Online buying behavior: B2C



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Online buying behavior: B2C





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Online buying behavior: B2C vs. B2B



- Conversion prediction is crucial for ad targeting
- Will conversion prediction suffer from multi-user activities for B2B purchase?



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- Conversion prediction is crucial for ad targeting
- Will conversion prediction suffer from multi-user activities for B2B purchase?



Online activity trails available



Conversion prediction is crucial for ad targeting *

user 1 trail:

Will conversion prediction suffer from multi-user activities for B2B purchase? *



act1, act3, act5, purchase



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user 1 trail: act1, act2, search WiFi offers, act3, act4, purchase

user 3 trail: act1, act3, act5, purchase



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user 2 trail: act2, act4, search WiFi offers, act5, act6

user 3 trail: act1, act3, act5, ... purchase

Consider users in the same cluster/household

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user 2 trail: act2, act4, search WiFi offers, act5, act6

relevant act (advertiser specific)

user 3 trail: act1, act3, act5, ... purchase

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user 3 trail: act1, act3, act5, ... purchase

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YAHOO! RESEARCH

media



users in an org (commercial IP, household ID)

relevant acts seed list

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Relevant acts seed list

advertiser specific list of online activities Start with high "conversion rate" activities
+ manual review
(e.g., visiting advertiser website)

 Iteratively expand seed list using activity2vec embeddings

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Activity2vec based expansion

activity2vec = word2vec style training with activity trails



user trail = document



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Activity2vec based expansion

activity2vec = word2vec style training with activity trails





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Results



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Results



Seed list iteration	AUC lift	#activities lift	# relevant users per converter cluster
S _{initial}	7.96%	-	1.241
S_1	7.98%	5.24%	1.278
S_2	8.80%	6.07%	1.283
S_3	8.44%	7.54%	1.297
S_4	8.29%	10.85%	1.317
S_5	8.27%	12.87%	1.325

initial seed list vs. no augmentation noise in expanded seed list

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Summary



- Trail augmentation helps!
- Seed list useful for targeting, insights!
- Uniform influence assumption

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Summary



- Trail augmentation helps!
- Seed list useful for targeting, insights!
- Uniform influence assumption
- Questions?

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