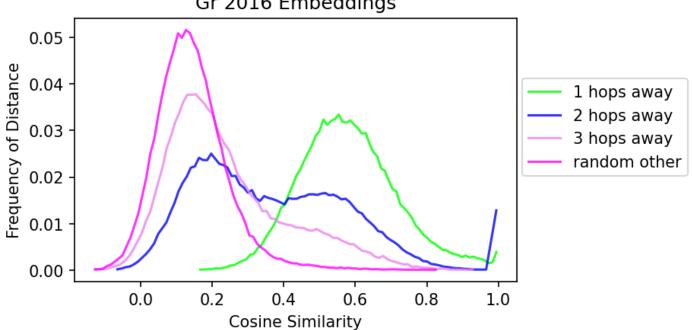
0. Embedding Descriptions/Comparisons

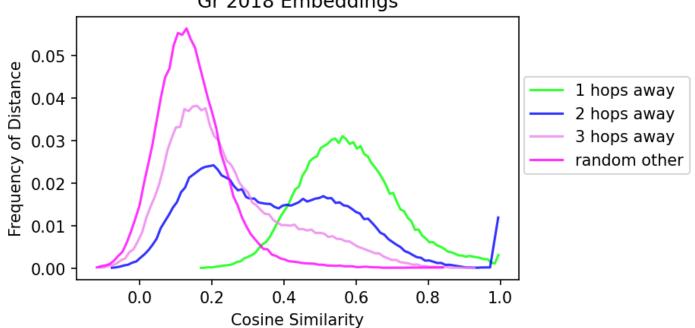
| | Gr 2016 | Gr 2018 | Gr 2020 |
|------------|---------|---------|---------|
| type | NET | NET | NET |
| year | 2016 | 2018 | 2020 |
| n_samples | 212501 | 212596 | 213905 |
| dimensions | 128 | 128 | 128 |

1. Distance Distributions by Hop

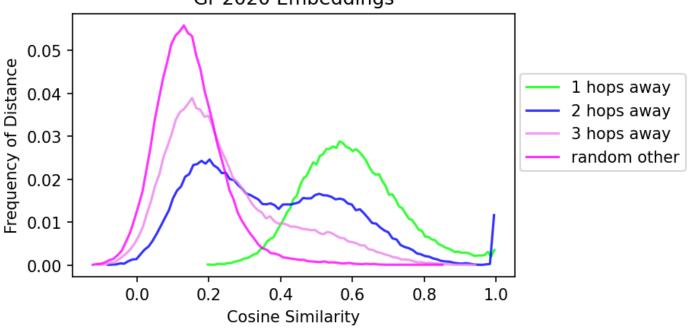
Gron Network Distance Distributions: Gr 2016 Embeddings



Gron Network Distance Distributions: Gr 2018 Embeddings

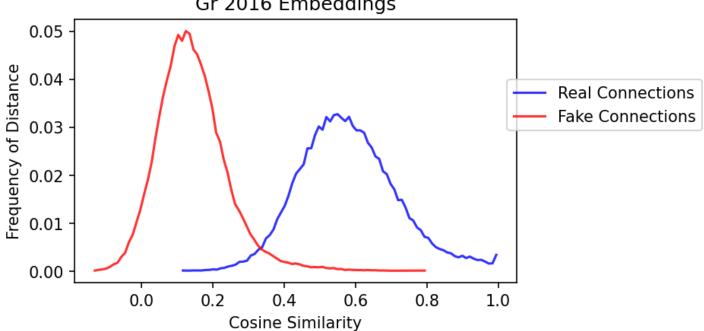


Gron Network Distance Distributions: Gr 2020 Embeddings

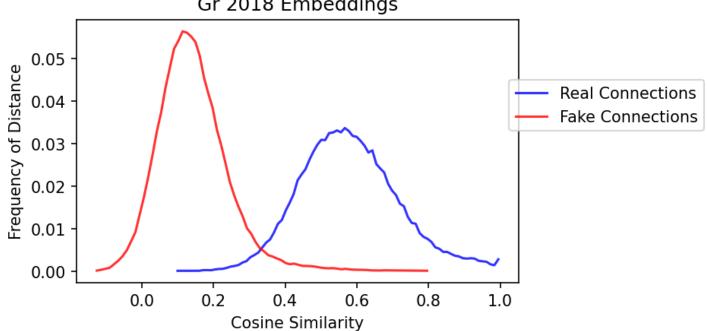


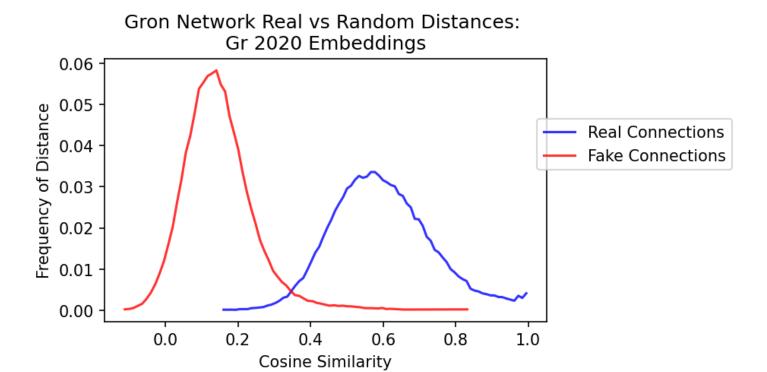
2. Distance Distributions: Real vs Fake Connections





Gron Network Real vs Random Distances: Gr 2018 Embeddings





3. Prediction - Income at Age 30 (R^2)

| | Gr 2016 | Gr 2016 + Base | Baseline | Gr 2018 | Gr 2018 + Base | Gr 2020 | Gr 2020 + Base |
|---------|---------|----------------|----------|---------|----------------|---------|----------------|
| 2011 | 0.069 | 0.08 | -0.018 | 0.126 | 0.139 | 0.068 | 0.084 |
| 2012 | 0.097 | 0.125 | -0.017 | 0.1 | 0.108 | 0.091 | 0.103 |
| 2013 | 0.091 | 0.198 | -0.004 | 0.104 | 0.183 | 0.081 | 0.17 |
| 2014 | 0.09 | 0.168 | -0.004 | 0.106 | 0.182 | 0.109 | 0.122 |
| 2015 | 0.136 | 0.199 | -0.006 | 0.159 | 0.235 | 0.17 | 0.182 |
| 2016 | 0.141 | 0.172 | -0.008 | 0.133 | 0.204 | 0.143 | 0.148 |
| 2017 | 0.169 | 0.16 | -0.001 | 0.177 | 0.182 | 0.166 | 0.183 |
| 2018 | 0.152 | 0.194 | -0.002 | 0.198 | 0.254 | 0.202 | 0.218 |
| 2019 | 0.145 | 0.166 | -0.002 | 0.153 | 0.182 | 0.173 | 0.186 |
| 2020 | 0.102 | 0.158 | -0.001 | 0.15 | 0.147 | 0.188 | 0.174 |
| 2021 | 0.029 | 0.16 | -0.007 | 0.079 | 0.179 | 0.132 | 0.181 |
| OVERALL | 0.083 | 0.129 | -0.006 | 0.115 | 0.145 | 0.137 | 0.151 |

Test Counts

| | Gr 2016 | Gr 2016 + Base | Gr 2018 | Gr 2018 + Base | Gr 2020 | Gr 2020 + Base |
|------|---------|----------------|---------|----------------|---------|----------------|
| 2011 | 499 | 465 | 447 | 416 | 411 | 383 |
| 2012 | 528 | 488 | 465 | 432 | 421 | 390 |
| 2013 | 563 | 515 | 486 | 450 | 430 | 400 |
| 2014 | 626 | 560 | 535 | 485 | 469 | 428 |
| 2015 | 690 | 603 | 578 | 518 | 500 | 455 |
| 2016 | 779 | 662 | 636 | 559 | 548 | 491 |
| 2017 | 835 | 736 | 727 | 635 | 619 | 552 |
| 2018 | 858 | 770 | 792 | 670 | 655 | 574 |
| 2019 | 935 | 848 | 845 | 727 | 733 | 628 |
| 2020 | 1081 | 1000 | 953 | 835 | 887 | 735 |
| 2021 | 1173 | 1100 | 991 | 893 | 893 | 764 |

| OVERALL 8567 7747 7455 6620 6566 5800 |
|---------------------------------------|
|---------------------------------------|

5. Prediction - Marriage (R^2)

5.1 Binary Prediction (Real vs. Fake Pairs)

| | Gr 2016 | Gr 2016 + Base | Baseline | Gr 2018 | Gr 2018 + Base | Gr 2020 | Gr 2020 + Base |
|---------|---------|----------------|----------|---------|----------------|---------|----------------|
| 2011 | -0.032 | -0.058 | -0.003 | -0.053 | -0.019 | -0.052 | -0.054 |
| 2012 | -0.024 | -0.064 | -0.004 | -0.083 | -0.067 | 0.002 | 0.037 |
| 2013 | -0.095 | -0.072 | -0.002 | -0.023 | 0.065 | 0.037 | 0.022 |
| 2014 | -0.036 | -0.005 | -0.003 | 0.05 | -0.041 | -0.073 | -0.061 |
| 2015 | -0.018 | -0.054 | -0.001 | -0.038 | 0.006 | 0.004 | 0.001 |
| 2016 | -0.048 | -0.036 | -0.001 | 0.018 | -0.058 | -0.032 | 0.011 |
| 2017 | -0.128 | -0.114 | -0.003 | -0.081 | -0.073 | 0.089 | 0.004 |
| 2018 | -0.005 | 0.011 | -0.001 | -0.139 | -0.025 | -0.087 | -0.023 |
| 2019 | -0.05 | 0.018 | -0.003 | -0.113 | -0.038 | -0.076 | -0.077 |
| 2020 | -0.052 | -0.084 | -0.004 | -0.046 | 0.018 | -0.068 | 0.048 |
| 2021 | -0.053 | -0.039 | -0.001 | -0.053 | -0.059 | -0.093 | -0.144 |
| OVERALL | -0.038 | -0.039 | -0.003 | -0.041 | -0.04 | -0.053 | -0.044 |

Test Counts

| | Gr 2016 | Gr 2016 + Base | Gr 2018 | Gr 2018 + Base | Gr 2020 | Gr 2020 + Base |
|------|---------|----------------|---------|----------------|---------|----------------|
| 2011 | 243 | 214 | 212 | 181 | 196 | 163 |
| 2012 | 276 | 240 | 250 | 210 | 231 | 189 |
| 2013 | 246 | 213 | 222 | 184 | 204 | 165 |
| 2014 | 268 | 233 | 234 | 193 | 213 | 174 |
| 2015 | 270 | 245 | 243 | 203 | 206 | 164 |
| 2016 | 274 | 255 | 242 | 205 | 215 | 177 |
| 2017 | 265 | 253 | 252 | 232 | 225 | 191 |
| 2018 | 276 | 266 | 271 | 253 | 236 | 204 |
| 2019 | 260 | 249 | 253 | 235 | 242 | 215 |

| 2020 | 189 | 180 | 197 | 185 | 202 | 183 |
|---------|------|------|------|------|------|------|
| 2021 | 203 | 188 | 200 | 180 | 193 | 168 |
| OVERALL | 3308 | 3025 | 3084 | 2717 | 2855 | 2422 |

5.2 Actual Partner Rank vs. Random Pairings

| | Gr 2016 | Gr 2018 | Gr 2020 |
|---------|---------|---------|---------|
| 2011 | 51.745 | 51.563 | 52.73 |
| 2012 | 48.568 | 48.749 | 48.891 |
| 2013 | 50.65 | 50.277 | 50.611 |
| 2014 | 50.243 | 50.518 | 50.5 |
| 2015 | 50.906 | 50.658 | 50.804 |
| 2016 | 48.544 | 48.384 | 47.851 |
| 2017 | 50.614 | 49.888 | 50.135 |
| 2018 | 50.146 | 50.73 | 50.179 |
| 2019 | 48.615 | 48.689 | 48.799 |
| 2020 | 49.879 | 50.873 | 50.847 |
| 2021 | 51.098 | 51.312 | 50.272 |
| OVERALL | 49.983 | 50.049 | 50.06 |