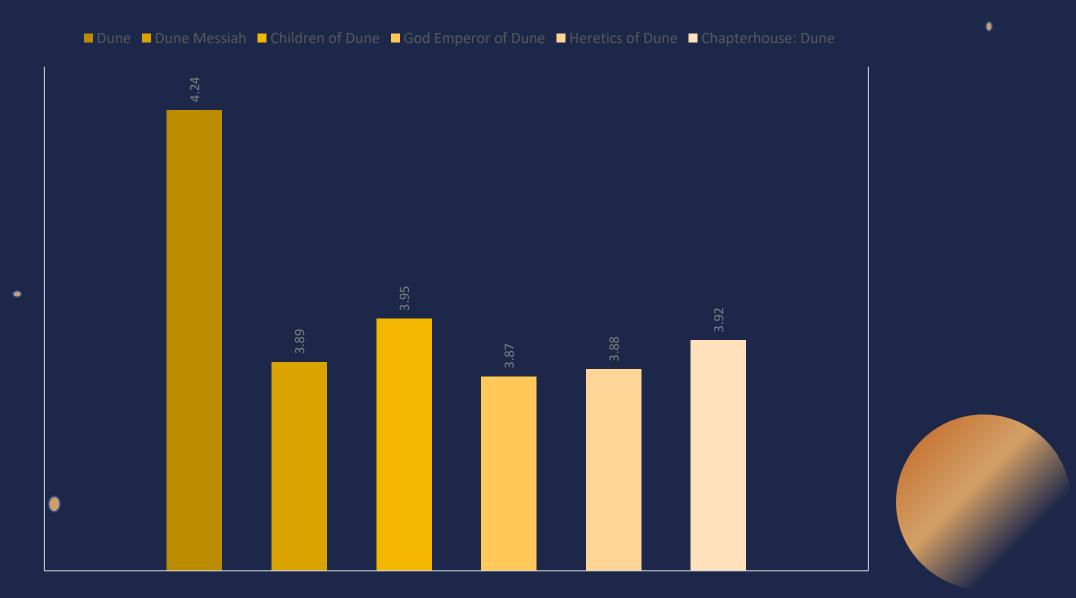


# introduction

Dune: the foundation of modern sci-fi

#### ratings on goodreads



# question

Can we model thematic exploration across books?

Can topic trends over books explain book ratings?

#### data and preprocessing

Dune e-book PDF's

Splitting of chapters into docs

General General cleaning/stop-word removal and lemmatization

Vectorization with TF-IDF

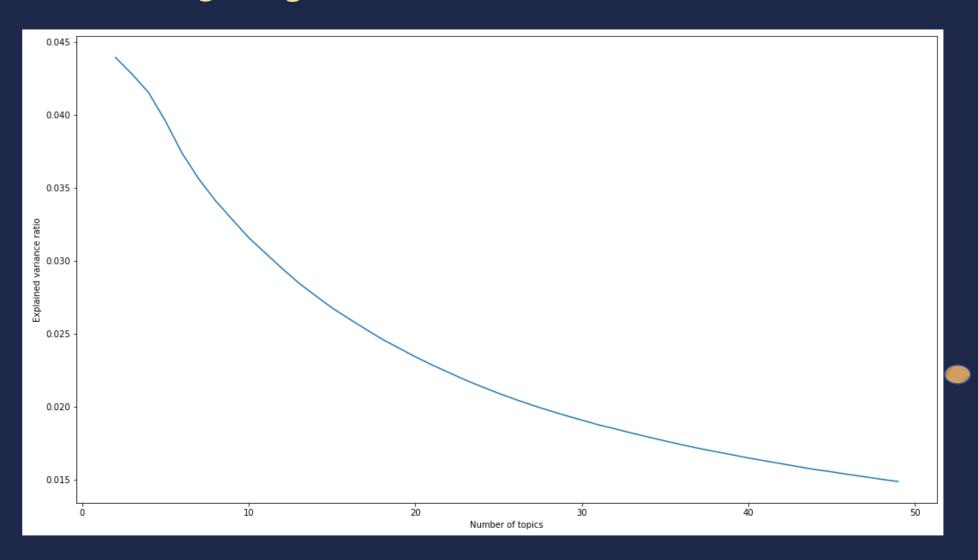
#### model evaluation

Qualitative

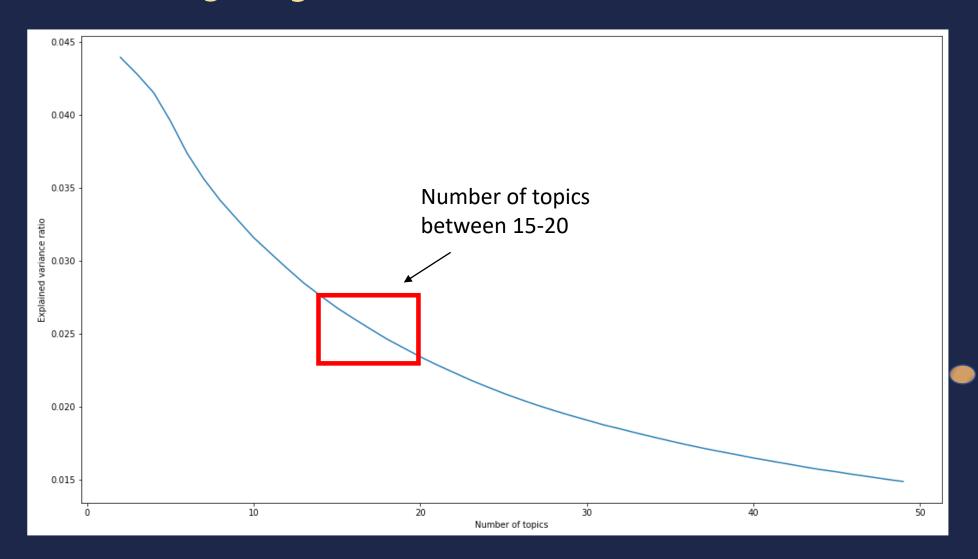
Intuition eyetest Quantitative

Explained Variance Ratio

# tuning hyper-parameters

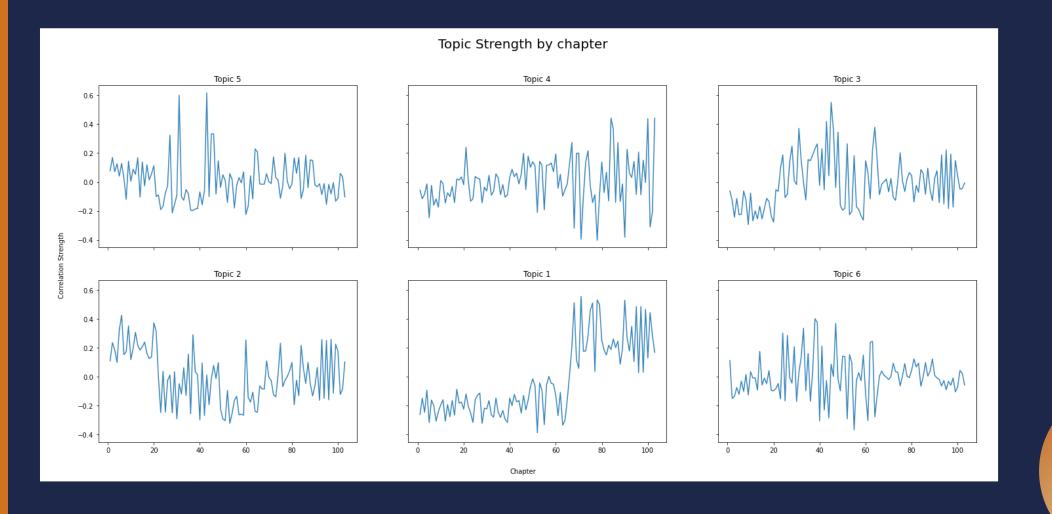


### tuning hyper-parameters

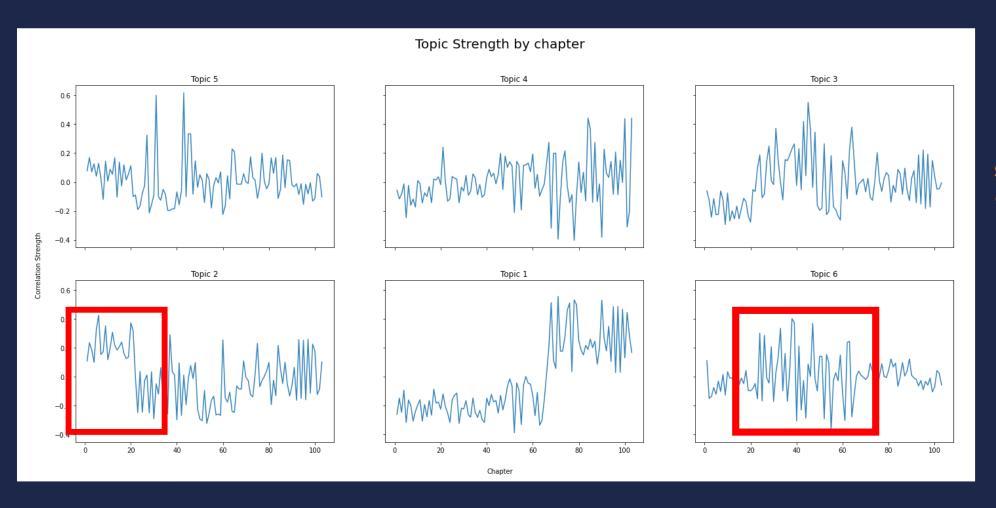


- Settle on number of topics = 20
- Average
   explained
   variance =
   2.3%

#### our results



#### our results



Topics 2 and 6 separate book 1 and 3 from rest of pack

#### top 6 topics by prevalence

- 1. God Emperor Leto II
- 2. Paul and Life in the Desert
- 3. House Corrino on Salusa Secundus
- 4. Emperor Leto II's Court
- 5. Farad and the Preacher
- 6. Paul as the Preacher

#### top 6 topics by prevalence

- 1. God Emperor Leto II
- 2. Paul and Life in the Desert
- 3. House Corrino on Salusa Secundus
- 4. Emperor Leto II's Court
- 5. Farad and the Preacher
- 6. Paul as the Preacher

#### a topic in action-paul and life in the desert

said, paul, jessica, stilgar, baron, duke

"PAUL STOOD outside the stilltent in the late afternoon. The crevasse where he had pitched their camp lay in deep shadow. He stared out across the open sand at the distant cliff, wondering if he should waken his mother, who lay asleep in the tent.... Within the tent, Jessica awakened, turned onto her back and peered sidelong

out the transparent end at Paul. He stood with his back to her and something about his stance reminded her of his father. She sensed the well of grief rising within her and turned away.

Presently she adjusted her stillsuit, refreshed herself with water from the tent's catchpocket, and slipped out to stand and stretch the sleep from her muscles."

• - *Dune,* Frank Herbert

# insights

- Topics that explain most variance are book-plot tied
- Books that are most plotdriven and related to Paul and Jessica are highest rated

#### future work

- Dialogue?
  - Topic modeling by punctuation use
- Focus more on order of words

# THANK YOU

#### appendix

#### Initial modeling:

```
Topic: ' Paul and Jessica in desert
said, paul, jessica, stilgar, baron, duke, thought, hawat, chani, gurney, mother, ll, man, fremen, ve, kynes, yueh, water, san
d, saw
Topic: ' Harkonnens and imperial politics '
baron, feyd, piter, hawat, rautha, nefud, lord, emperor, duke, yueh, rabban, sardaukar, uncle, leto, nephew, mentat, count, ah,
fenring, said
Topic: ' House Atreides on Dune '
duke, hawat, yueh, kynes, halleck, table, leto, sire, room, father, idaho, tuek, mapes, thufir, harkonnens, fremen, 11, men, do
Topic: ' Atreides and the Fremen '
gurney, paul, stilgar, halleck, hawat, fremen, kynes, men, sardaukar, duke, sire, lord, feyd, worm, rautha, man, fedaykin, equi
pment, storm, sand
Topic: ' Palace intrigue '
yueh, paul, stilgar, tooth, book, jamis, gurney, leto, ring, wanna, sardaukar, house, ll, tattoo, read, hall, filmbook, seeker,
room, diamond
Topic: ' Desert ecosystem '
kynes, sand, yueh, paul, tent, pack, lump, desert, piter, worm, baron, father, rock, fissure, thopter, surface, worms, storm, h
ole, lecturing
Topic: ' Paul
paul, feyd, gurney, rautha, mother, old, reverend, emperor, tent, woman, seeker, haderach, kwisatz, box, pain, bene, gesserit,
count, choam, slave
Topic: ' Desert adventure
hawat, sand, lump, tent, pack, rock, cliff, fremen, mapes, seeker, fissure, basin, night, stars, thumper, room, dunes, sound, f
oam, filter
Topic: 'Sietch Tabr'
alia, harah, baron, sardaukar, emperor, tent, sand, mother, reverend, rabban, tharthar, child, fremen, chani, piter, hangings,
sietch, old, son, woman
Topic: ' Jessica and the Harkonnens '
piter, jessica, gurney, czigo, jamis, baron, duke, scarface, paul, kinet, leto, litter, lord, stilgar, pilot, banker, woman, vo
ice, knife, mentat
```

#### appendix

```
Topic: ' Atreides Family
said, leto, idaho, moneo, alia, paul, lord, ghanima, jessica, stilgar
Topic: ' God Emperor Leto II '
moneo, idaho, leto, lord, siona, hwi, fish, speakers, cart, malky
Topic: ' Paul and life in the desert '
idaho, paul, irulan, korba, ghola, scytale, moneo, chani, alia, edric
Topic: ' House Corrino on Salusa Secundus '
farad, jessica, idaho, ghanima, tyekanik, moneo, alia, wensicia, fali, tyek
Topic: ' God Emperor Leto II's royal party '
idaho, siona, nayla, garun, namri, duncan, leto, women, village, sand
Topic: ' Farad and the preacher '
farad, tyekanik, lord, wensicia, paul, said, anteac, scytale, tyek, prince
Topic: ' Paul as the preacher '
preacher, jessica, alia, javid, namri, fali, halleck, leto, lord, anteac
Topic: 'Topic 7'
siona, nayla, topri, moneo, garun, kobat, tyekanik, tower, farad, preacher
Topic: 'Topic 8 '
anteac, luyseyal, hwi, irulan, lord, nayla, fish, reverend, said, jessica
Topic: 'Topic 9 '
stilgar, lord, preacher, korba, leto, stil, nayla, dib, farad, muad
Topic: 'Topic 10'
preacher, irulan, alia, ghanima, idaho, guide, plaza, temple, duncan, crowd
Topic: 'Topic 11 '
irulan, namri, halleck, scytale, stilgar, siona, korba, nayla, princess, reverend
Topic: 'Topic 12'
anteac, luyseyal, said, stilgar, scytale, messenger, preacher, farok, moneo, hwi
Topic: 'Topic 13 '
scytale, preacher, farok, edric, jessica, bannerjee, leto, ghanima, fali, dib
Topic: 'Topic 14'
irulan, muriz, worm, storm, sandtrout, leto, sand, reverend, jessica, mother
luyseyal, anteac, paul, leto, nayla, jessica, siona, reverend, moneo, irulan
Topic: 'Topic 16 '
alia, scytale, leto, farok, said, edric, siona, hayt, duncan, stilgar
Topic: 'Topic 17'
paul, halleck, korba, said, leto, hwi, know, preacher, siona, father
Topic: 'Topic 18'
bijaz, hayt, irulan, dwarf, stilgar, preacher, dhuri, otheym, dib, muad
nayla, muriz, topri, alia, bijaz, worm, tyekanik, said, garun, korba
```