Data Science Case Study

Matthew Guzdial

guzdial@ualberta.ca

Announcements

- Quiz 3 marked and returned
- Assignment 3 still pending (apologies!)
- Thursday virtual help session 5-8pm
- Quiz 4 released 11am Thursday (no lecture Friday)

Letter Grades Cutoffs (on Syllabus now)

Highest	Lowest	Letter
100.00 %	97.50 %	A+
97.49 %	92.50 %	A
92.49 %	90.00 %	A-
89.99 %	87.50 %	B+
87.49 %	82.50 %	B
82.49 %	80.00 %	B-
79.99 %	77.50 %	C+
77.49 %	72.50 %	C
72.49 %	70.00 %	C-
69.99 %	67.50 %	D+
67.49 %	60.00 %	D
59.99 %	0.00 %	F

Topics Voting Wednesday (16 topics, pick 4)

- Reinforcement Learning in Games, Automated Playtesting, Game AI in Academia, AI for Automated Game Playing, Balancing Game AI, "How AI can change cinematic cutscenes”, Generated dialogue and story
- AI-based Game Design
- AI for Game Design
- Procedural Content Generation via Machine Learning
- Mixed-initiative PCG (human + AI designing)
- Further discussion on covered topic

Matchmaking

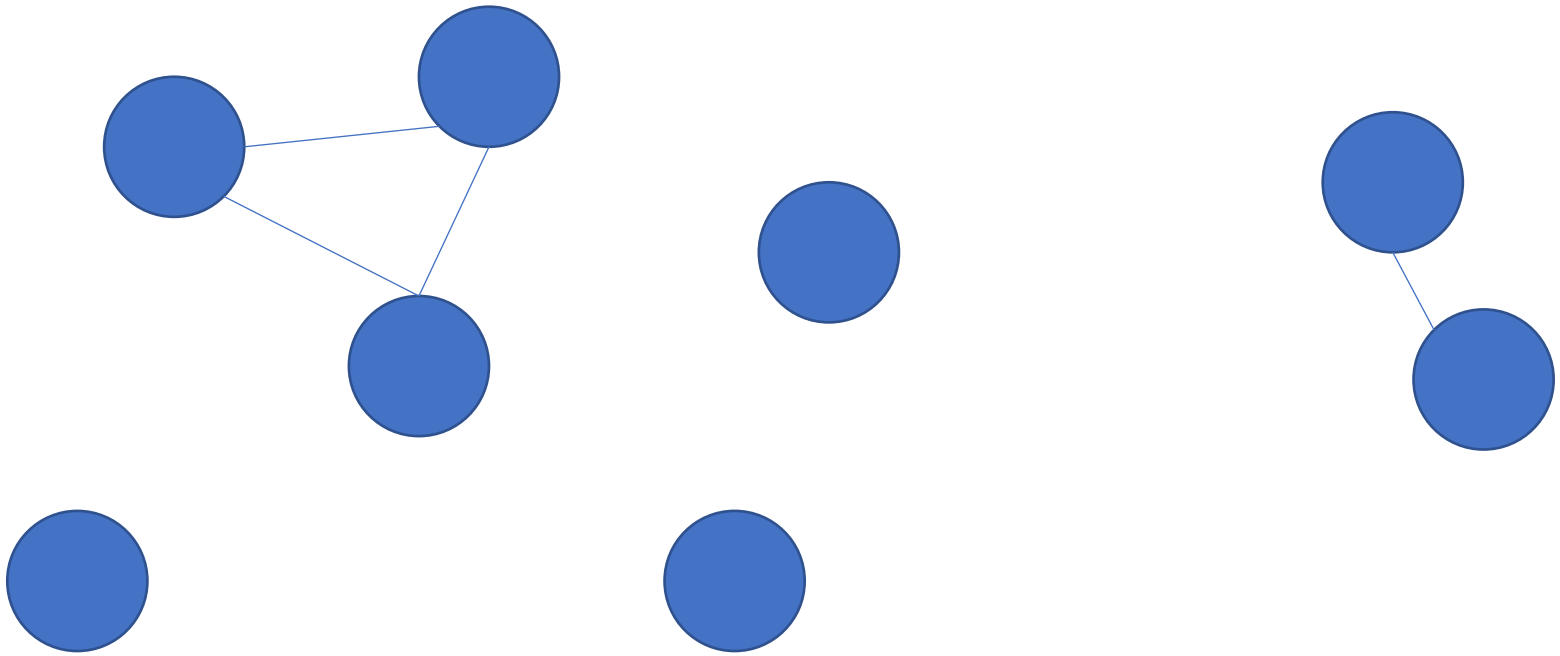
Matchmaking

Two Basic Types

- Competitive: Matching two individuals or groups who will then compete against one another
- Collaborative: Matching some number of individuals into teams (looking for group, LFG)

In many games, Collaborate matchmaking then Competitive matchmaking

Example: Form a group of six?



What existing approach is this like?

Single-linkage clustering

- Now distance estimates the quality of a particular match (Utility-based approach)
- May take into account things like friend groups, Elo, queue time, etc.

Notably we cannot make the same assumptions as graph matching approaches. The “nodes” (points) we are matching may disappear or more may be added during the matching.

Data Science Case Studies (43:54)

https://youtu.be/_YSYVRdzUkE?t=2629

Dr. Alexander Zook (then) of Blizzard

PQ1: Where could this Utility function fail?
50:46
https://forms.gle/dH65CoBBBirsqm6rd7
https://tinyurl.com/guz-pq25a

PQ2: Why GMMs instead of another clustering approach? (~1:08:46)
https://forms.gle/DZBdgyAjAnnAojSK8
https://tinyurl.com/guz-pq25b

More examples with any extra time