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Communities and ranking
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COMP2200/COMP6200 – Week 11C Ego networks and communities

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Why ego networks matter

- Sometimes we care about one student's neighbourhood: who surrounds them, and how tight that circle is.
- Ego networks help us write human stories – "Jasmin is the bridge between commuters and on-campus residents."
- They also surface students at risk of isolation so we can intervene early.

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Orange demo: Ego Graph

1. Drop in **Ego Network**. Connect it after **Network Explorer**.

2. Choose a focal student, e.g. *Jasmin*. Inspect the induced subgraph and exported table.

3. Note the option to keep ego+alter attributes. Handy for describing context in assignments.

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Community detection basics

- Orange offers modularity-based clustering. Think of it as finding dense pockets of study collaboration.
- Colouring by community often reveals natural study pods or campus cohorts.
- Ask: do these clusters align with majors, timetables, or social groups we already know?

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PageRank in context

- PageRank scores (via eigenvector centrality) tell us who is connected to other influential peers.
- In our data, a high PageRank might mark the student who connects two strong communities.
- Use PageRank together with qualitative notes: does this person actually do the coordinating, or are they just friendly?

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Storytelling template

1. **Question**: What are we trying to explain? E.g. "Why is Assignment 3 group B smashing milestones?"
2. **Evidence**: Cite centrality metrics, ego network observations, and community colours.
3. **Implication**: Suggest an action – invite isolated nodes to mentoring, or balance workload across hubs.

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Class discussion prompts

- Which network stories feel ethically safe to tell? Where might we overstep by labelling someone "low influence"?
- How do we combine network metrics with attendance or survey data for a richer picture?
- What other contexts (transport, health, finance) could benefit from this exact workflow?

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Wrap-up and next steps

- We covered ego zoom-ins, community structure, and PageRank narratives.
- For homework: screenshot one Orange workflow you built today and post a one-sentence insight on Ed.
- Next week pivots to predictive modelling. Bring laptops charged and questions about linear models.

Need help?

Tutors are sticking around for 15 minutes. Ask now while the network diagrams are still fresh in your mind.