

Improving on legacy conferences

**Titipat Achakulvisut, Kording Lab, University of Pennsylvania
with Tulakan Ruangrong, Dan Goodman (Imperial College), Brad Wyble (Penn State), Konrad Kording**

Legacy Conference

backbone of scientific communication

- Meeting scientific friends and future collaborators
- Giving talks that make or break our careers
- Finding jobs
- Celebrating the progress made towards unraveling the universe
- ...

Legacy Conference

problem with legacy conference

Issues with travels

- Producing a lot of CO₂ (~ 1kg per 10 km by airplane, 1.3 metric tons EU/US) and waste (from catering/printing)
- Wasting time of flying
- Hindering people with family duties, limited funding, visas, ...

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Issues at conference

- Finding information from > 1k posters is difficult
- Dominating by same questions from same pool of scientists
- Missing meeting people with similar interests

How do we improve?

We've been working to improve conferences @KordingLab

- Bringing machine learning to help improve the following:
knowledge discovery, reduce editors time, help find new people

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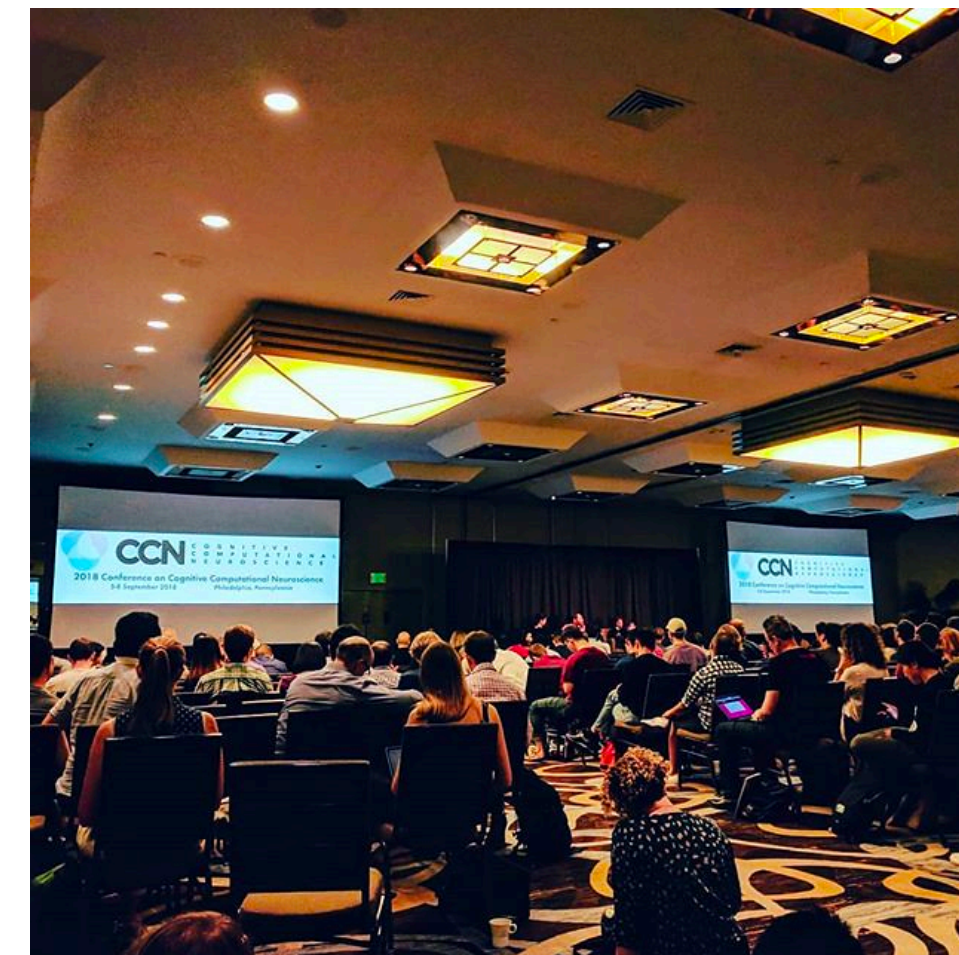
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Society for Neuroscience
(with Coe-Truman)



COSYNE



CCN

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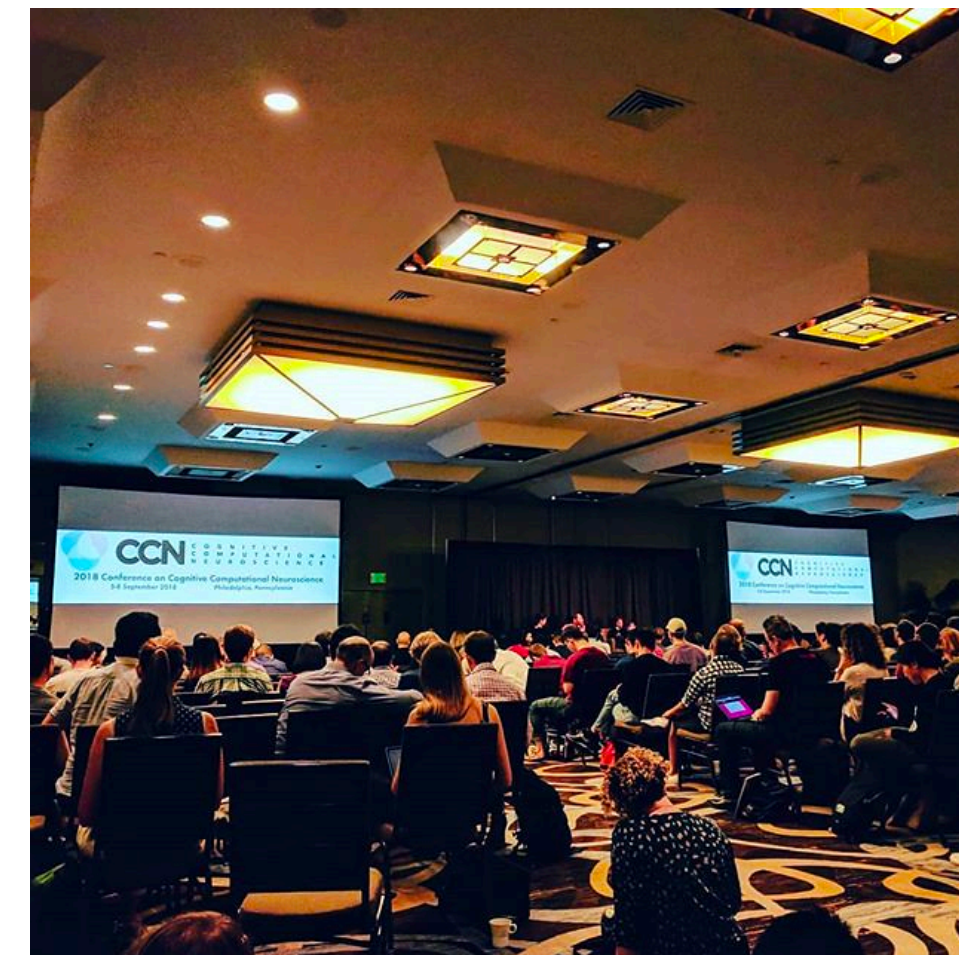
Society for Neuroscience
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Search/Recommendation engine



COSYNE

Paper-reviewer matching



CCN

Mind matching

Scholarfy

making recommendation engine for large conference

Be sure to hit the “Clear” button to remove all search filters.

Display As

☒ Presentations

☐ Sessions

Session Type: ALL

Session Title:

Session Number:

Theme: ALL

Sub Theme: ALL

Topic: ALL

Presentation Number:

Poster Board Number:

Presentation Title:

Author/Speaker:	Last Name	1st Initial

Institution:

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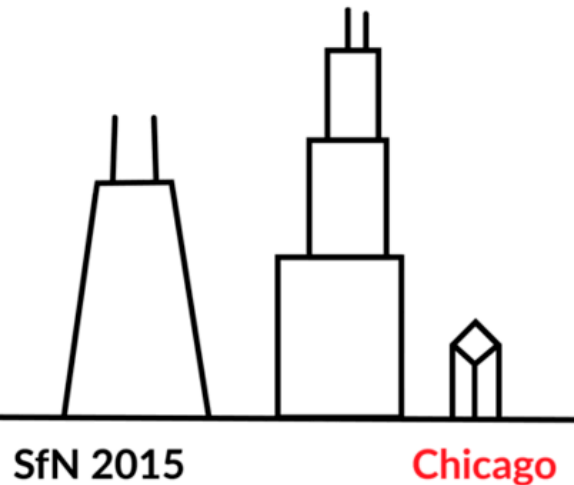
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author, title, or session #



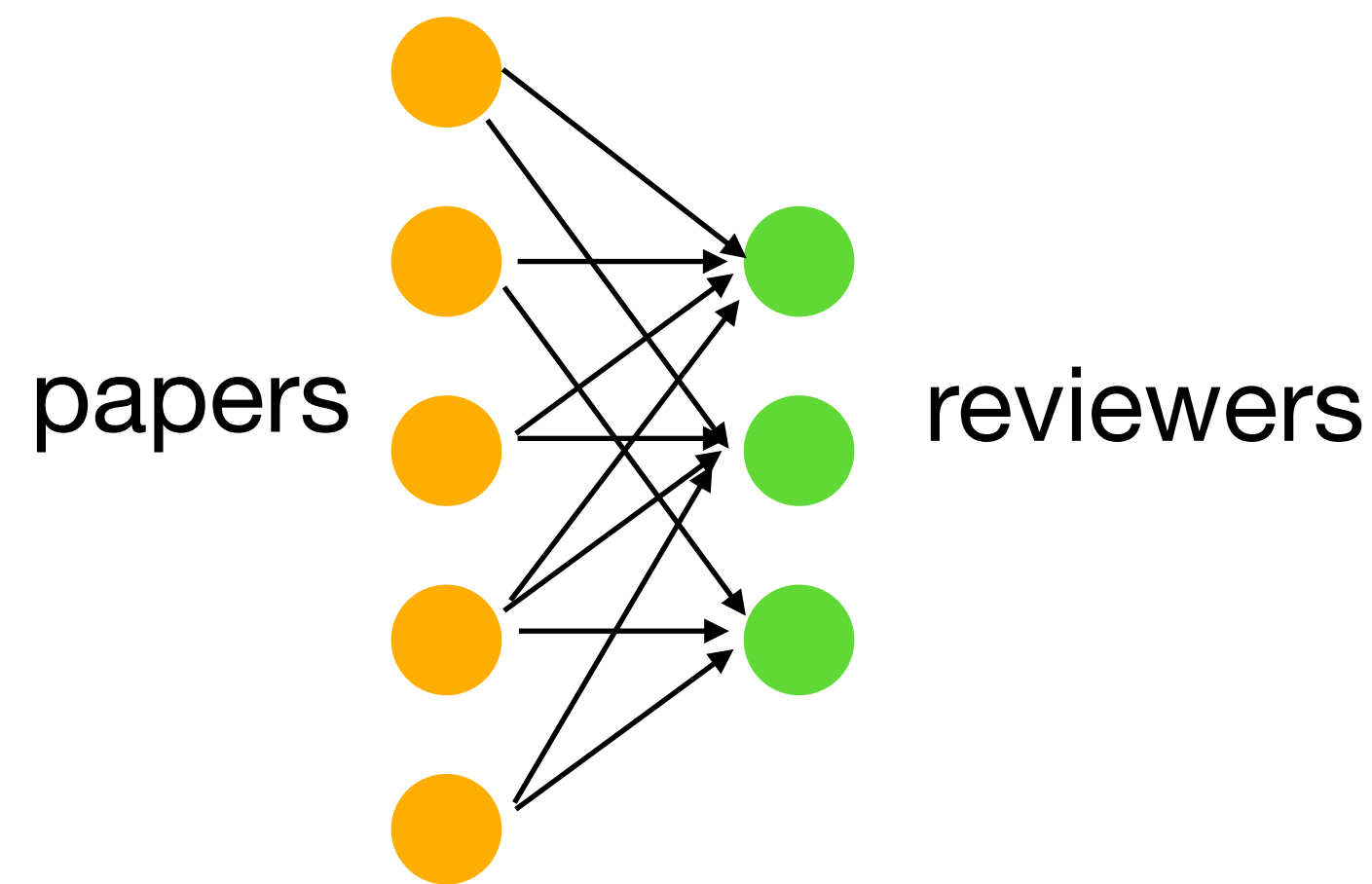
Tutorial

Former SfN search engine

One tab search, recommendation

Paper-reviewer matching

for COSYNE and CCN conference

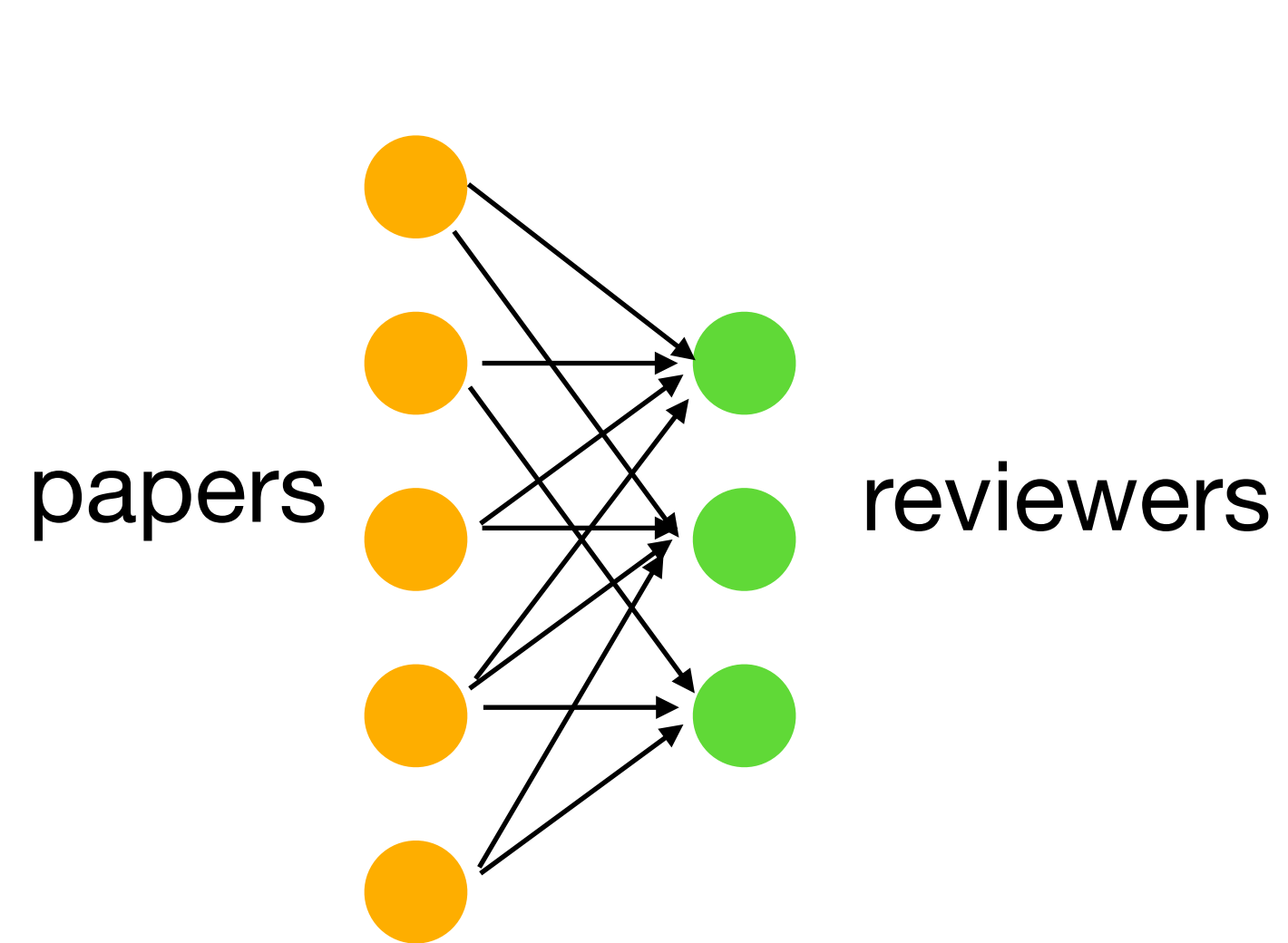


Match incoming papers to reviewers

- Takes a lot of time from editors
- Biased toward their assignment

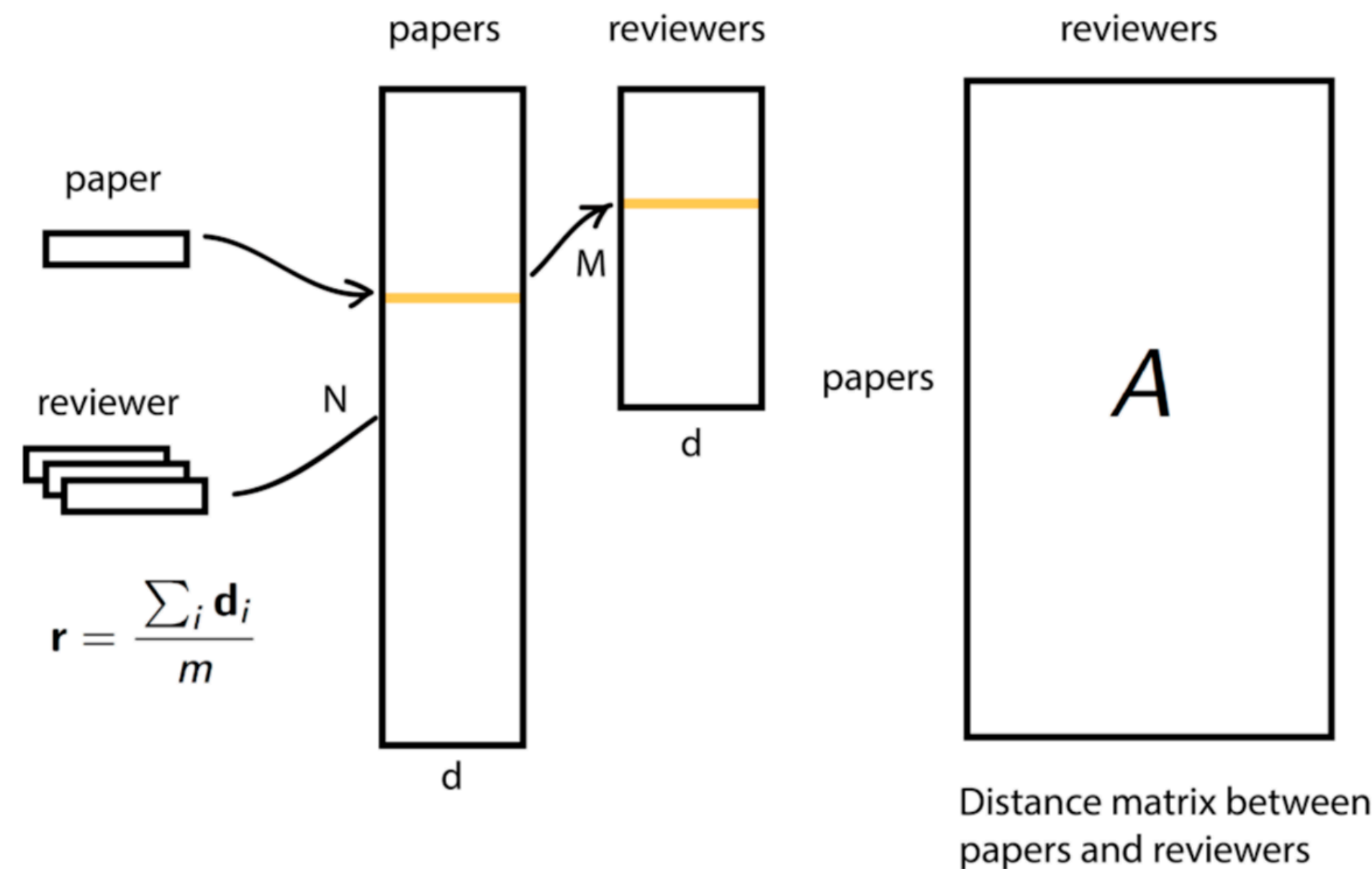
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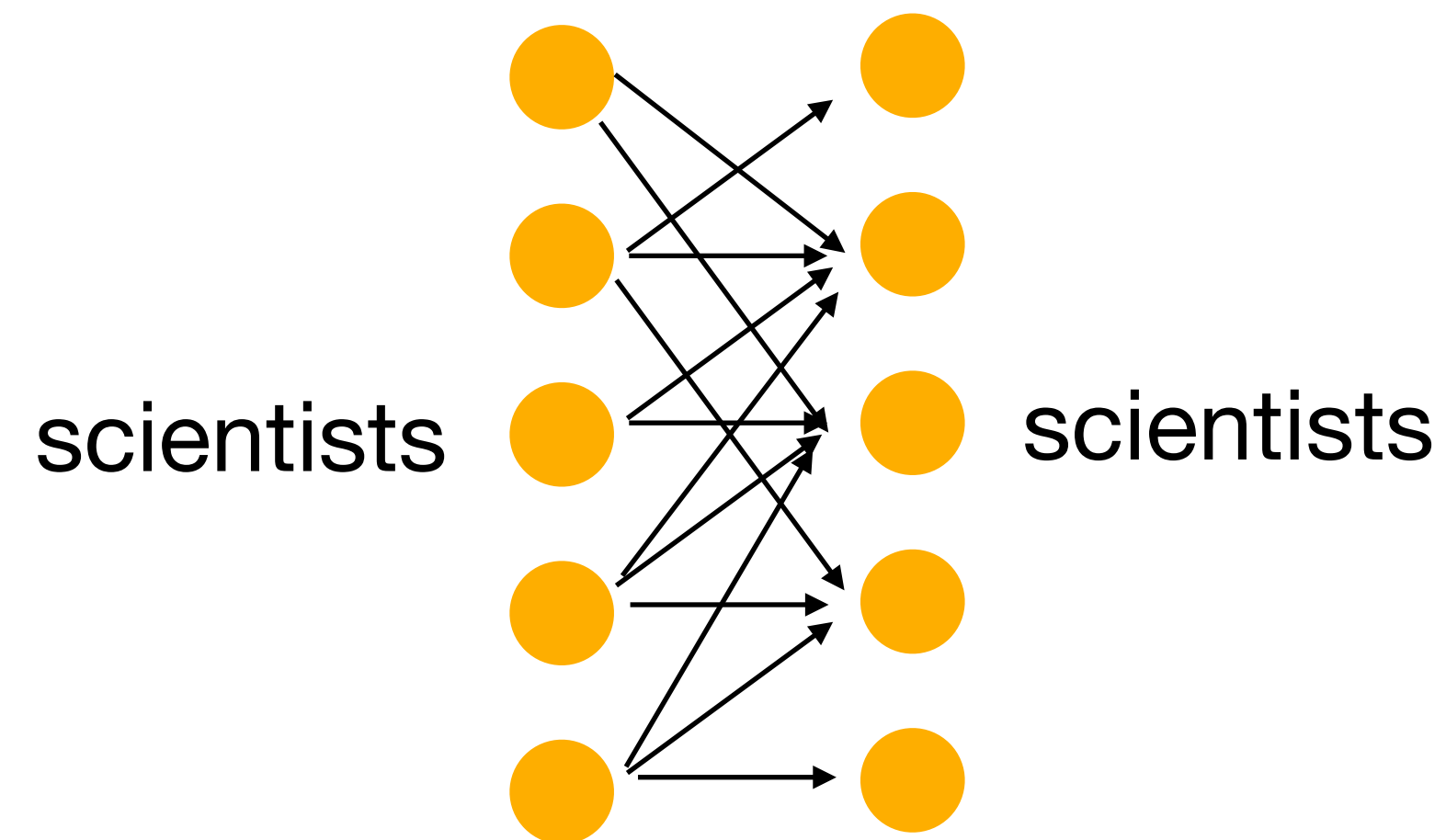
minimize $A^T \mathbf{b}$
 subject to $N_p \mathbf{b} \leq \mathbf{c}_p$
 $N_r \mathbf{b} \leq \mathbf{c}_r$
 $\mathbf{b} \leq \mathbf{1}$
 $\mathbf{b} \geq \mathbf{0}$

Minimize global distance
between papers and
reviewers

- **Goal:** find assignment matrix \mathbf{b}

Mind matching for CCN conference

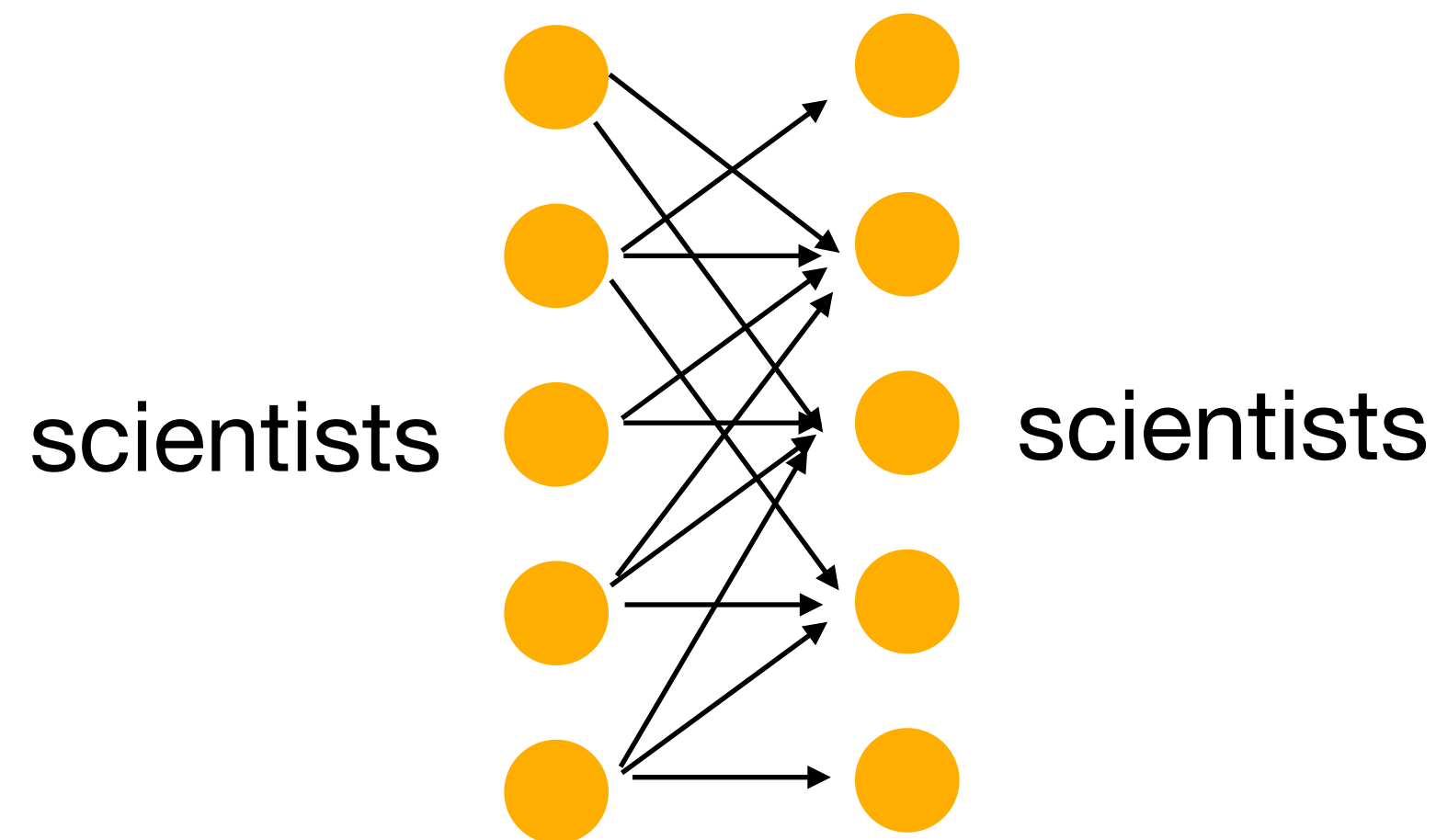
Meet 6 scientists, 15 mins each = 1.5 hours



Same idea as paper-reviewer matching

Mind matching for CCN conference

Meet 6 scientists, 15 mins each = 1.5 hours



Same idea as paper-reviewer matching

☒ I want to participate in the matching part of neuromatch

☒ I want to participate in the "grouped mind" part of neuromatch (see [instructions](#))

Google scholar URL

Personal page

Preferred meeting style
casual meeting find collaboration

How experimental/computational you are?
experimental computational

Preferred meeting platform
 x | v

Put your abstracts or working abstracts below. The content of your abstract will exclusively be used to match you with people with similar content.

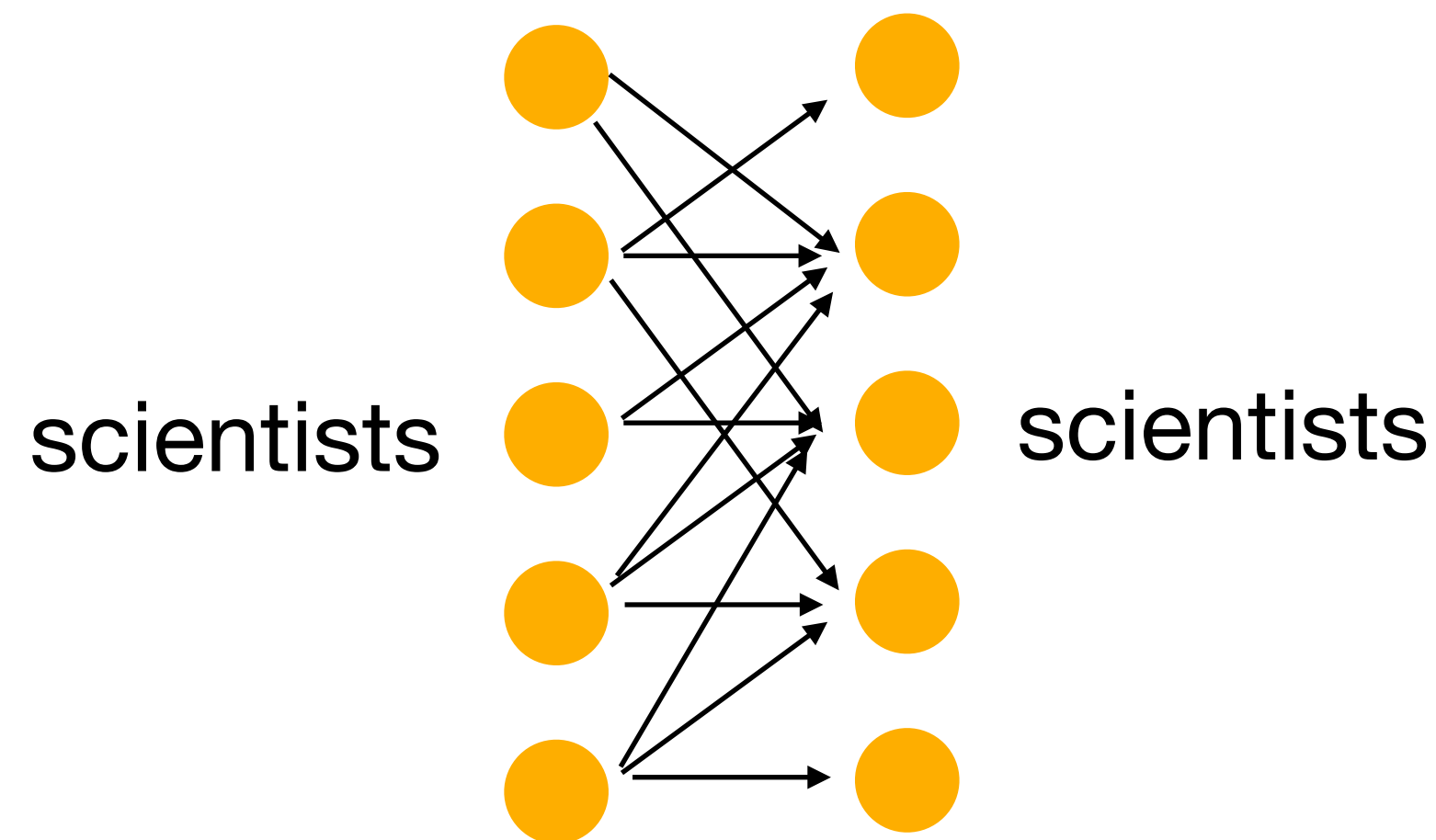
Abstract +

Conferences are the backbone of scientific communication, disseminating ideas, facilitating debate, and enriching the community. Legacy conferences are run in physical spaces, with all the disadvantages that go with that: massive organizational needs for travel, high costs and the resulting exclusion, difficulty in organization, and ●

Interface to add abstracts
and conflicts e.g. I might know
Konrad before

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and conflicts e.g. I might know
Konrad before

Add regularizer e.g.
5% of casual vs. collaboration

**Output (printed in
name tag)**

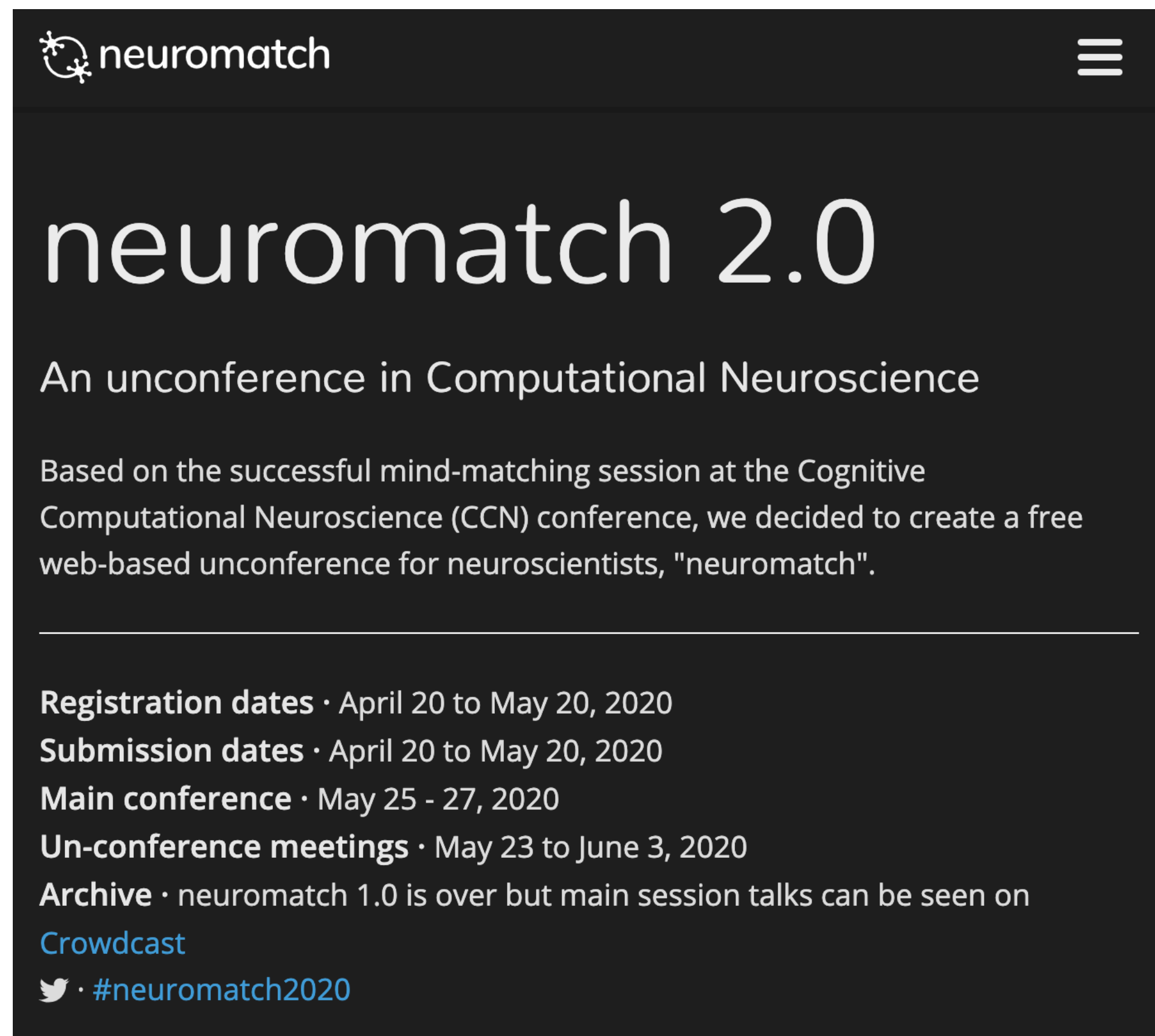
table number 1;
table number 2;
table number 3; ...

Bringing all together

neuromatch: An unconference in computational neuroscience

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Frontend: Gatsby

Backend: Python, hug API

Third Party/Database: Google Firebase and Firestore

Bringing all together

neuromatch: An unconference in computational neuroscience

List of attendees

Here are all the attendees at the conference (updated once a day). We list the attendees based on your relevance.

Sorted by:

RelevanceNameInstitutionLocation

type here to filter..

Name	Institution	Email
	University of Pennsylvania (grid.25879.31)	
	University of Pennsylvania (grid.25879.31)	
	University of Pennsylvania (grid.25879.31)	
	University of Pennsylvania (grid.25879.31)	
Titipat Achakulvisut	University of Pennsylvania (grid.25879.31)	

Location, Relevance Recommendation

neuromatch: virtual poster session

This is a virtual poster session for neuromatch conference. Please use the link under each poster to direct to author's poster, recorded talk, and discussion channel during the conference. You can checkout poster and recorded talk anytime prior to the conference. The discussion will be available during neuromatch poster session.

Note · this session is optimized to view on desktop. Please be aware of some minor view problems on mobile.

type here to filter..

Improving on legacy conferences by moving online

Titipat Achakulvisut; University of Pennsylvania (grid.25879.31)

[discussion] [slides] [recorded talk]

Abstract: Scientific conferences and meetings have an important role in research, but they also suffer from a number of disadvantages: in particular, they can have a massive carbon footprint, they are time-consuming, ...

Toward the biological model of the hippocampus as the successor representation agent

Hyunsu Lee; Keimyung University (grid.412091.f)

[discussion] [slides] [recorded talk]

Abstract: The hippocampus is an essential brain region for spatial memory and learning. Recently, a theoretical model study on the hippocampus applying temporal ... (TD) learning, one of reinforcement learning a

Enriching the Human Connectome: Newly digitized von Economo & Koskinas atlas integrated in The Virtual Brain

Anastasia Brovkin; University Medical Center Hamburg-Eppendorf (grid.13648.38)

[discussion] [slides] [recorded talk]

PsychRNN: An accessible yet flexible Python package for training artificial recurrent neural networks on cognitive tasks.

Jasmine Stone; Yale University (grid.47100.32)


[discussion] [slides] [recorded talk]


Abstract: Modeling using recurrent neural ... (RNNs)

Poster session

Bringing all together

neuromatch: An unconference in computational neuroscience


neuromatch



neuromatch 2.0

An unconference in Computational Neuroscience

Based on the successful mind-matching session at the Cognitive Computational Neuroscience (CCN) conference, we decided to create a free web-based unconference for neuroscientists, "neuromatch".

Registration dates · April 20 to May 20, 2020
Submission dates · April 20 to May 20, 2020
Main conference · May 25 - 27, 2020
Un-conference meetings · May 23 to June 3, 2020
Archive · neuromatch 1.0 is over but main session talks can be seen on [Crowdcast](#)
 · [#neuromatch2020](#)

Main talks: Same way as in legacy conference with questions via Crowdcast (we're using now!)

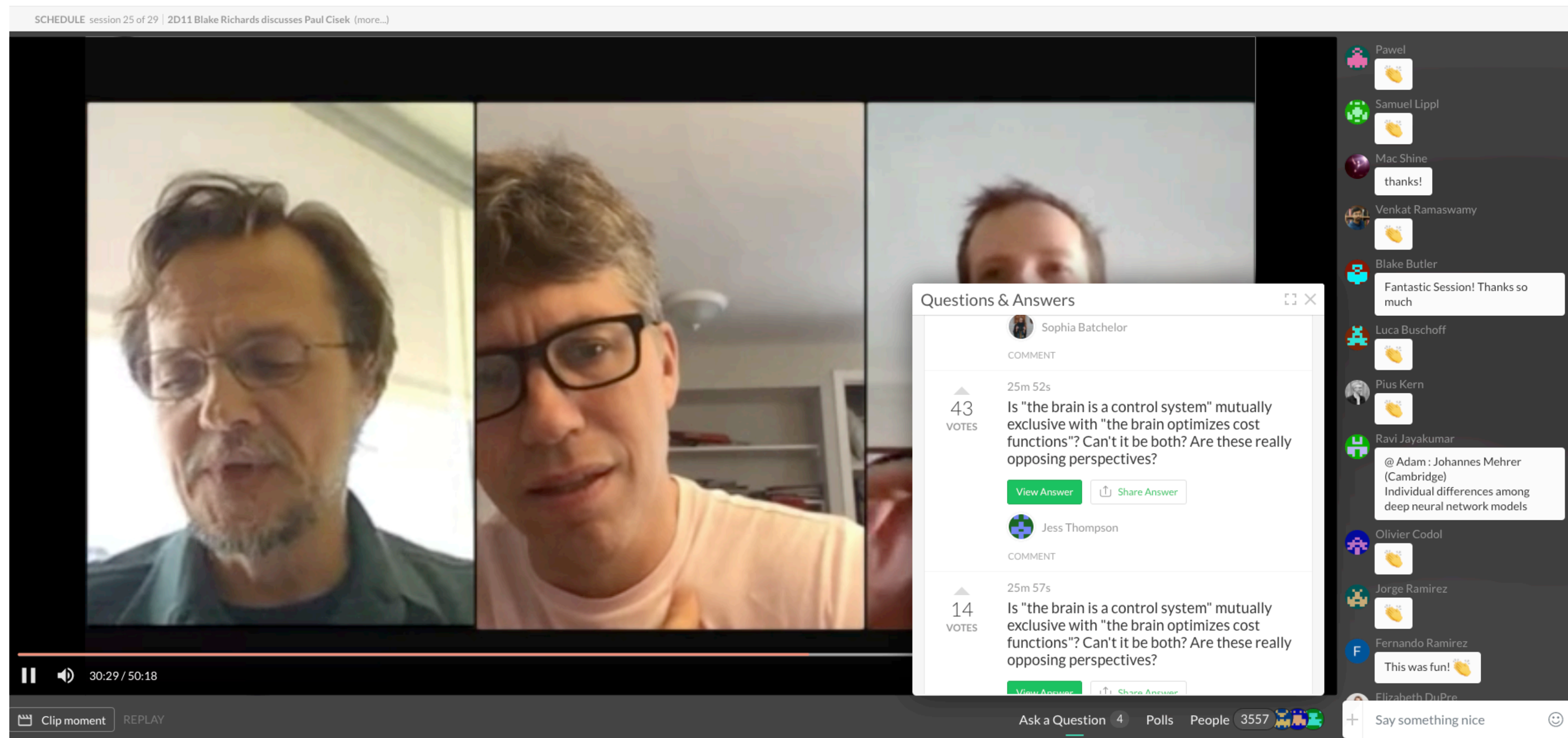
Poster sessions: short talks (12 + 3 mins), Contributed talk (18 + 4 mins, selected)

One-on-one meeting: same as Mind Matching

Virtual poster sessions: virtual poster session via <https://neuromatch.io/posters/>

Bringing all together

neuromatch: An unconference in computational neuroscience

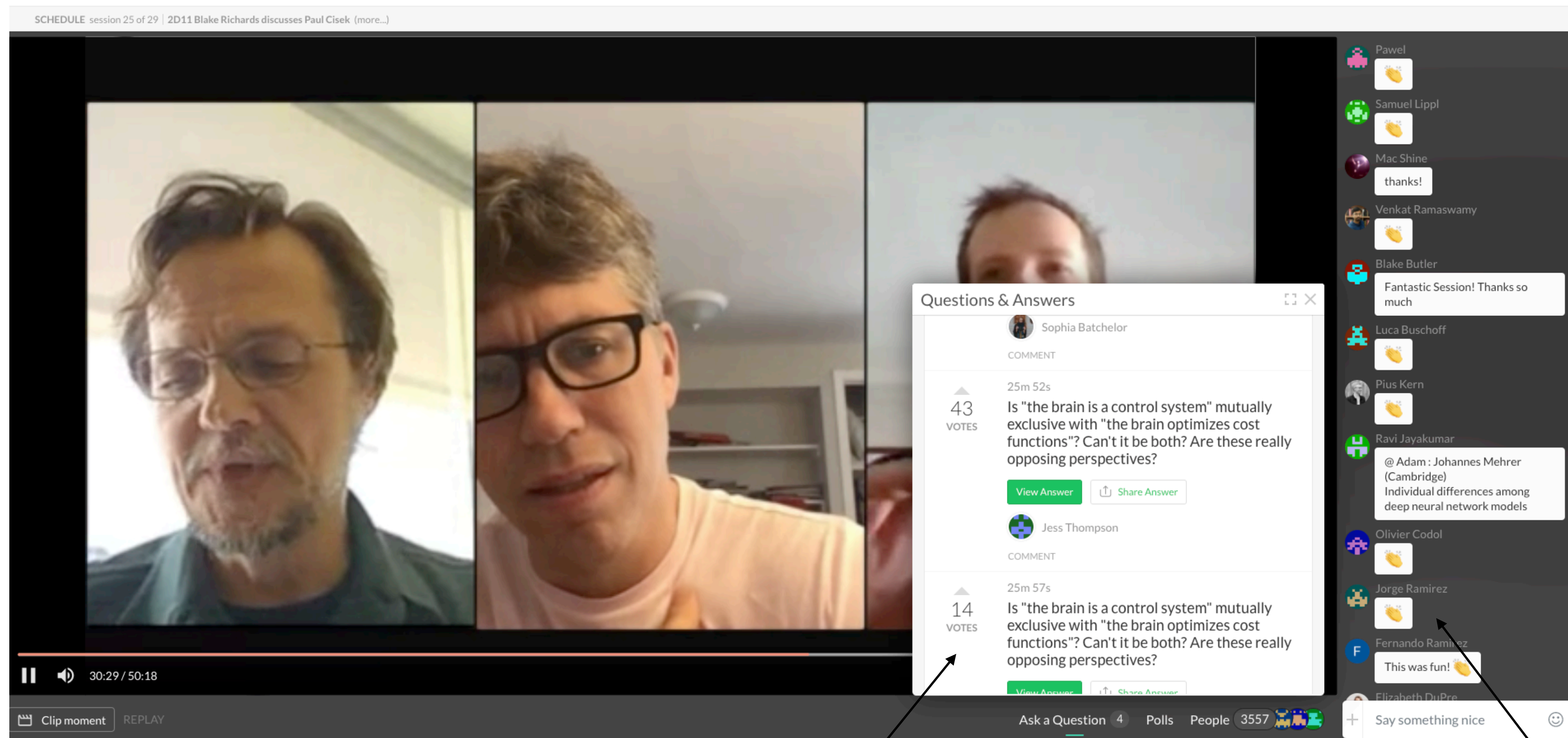


Example screenshot from Crowdcast (no pre-installed program required)

Bringing all together

neuromatch: An unconference in computational neuroscience

SCHEDULE session 25 of 29 | 2D11 Blake Richards discusses Paul Cisek (more...)



43 VOTES
25m 52s
Is "the brain is a control system" mutually exclusive with "the brain optimizes cost functions"? Can't it be both? Are these really opposing perspectives?
View Answer Share Answer

14 VOTES
25m 57s
Is "the brain is a control system" mutually exclusive with "the brain optimizes cost functions"? Can't it be both? Are these really opposing perspectives?
View Answer Share Answer

Ask a Question 4 Polls People 3557



Say something nice

Questions and polls

Chat box

Bringing all together


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Attendance and engagement

- 21 main sessions, 3000 attendees
- 912 max attendees, 678 median attendees
- 47.3% grad students, 20% postdocs, 11.7% professors, research staffs 10.7%, industry 3.5%
- 38% rewatch talks a day after

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Cost

- Crowdcast \$150
- Amazon Web Service \$60

Conclusions

- ML can be used to improve both legacy and online conference
- We can bring social components to online conference
(group people with similar interest, one-on-one matching)

What's next?

neuromatch 2.0

- Group scientists for a meeting session, “grouped mind”
- Create virtual poster session, an hour of poster session
- Quantify online vs. legacy conference — research