IEEE INFOCOM 2019
TPC Informational Meeting

Honolulu, HI
April 18, 2018

Technical Program Committee Co-Chairs

Wenjing Lou (Virginia Tech)

Giovanni Pau (Sorbonne Université / UCLA)

Tilman Wolf (University of Massachusetts)

TPC Vice Chair for Information Systems
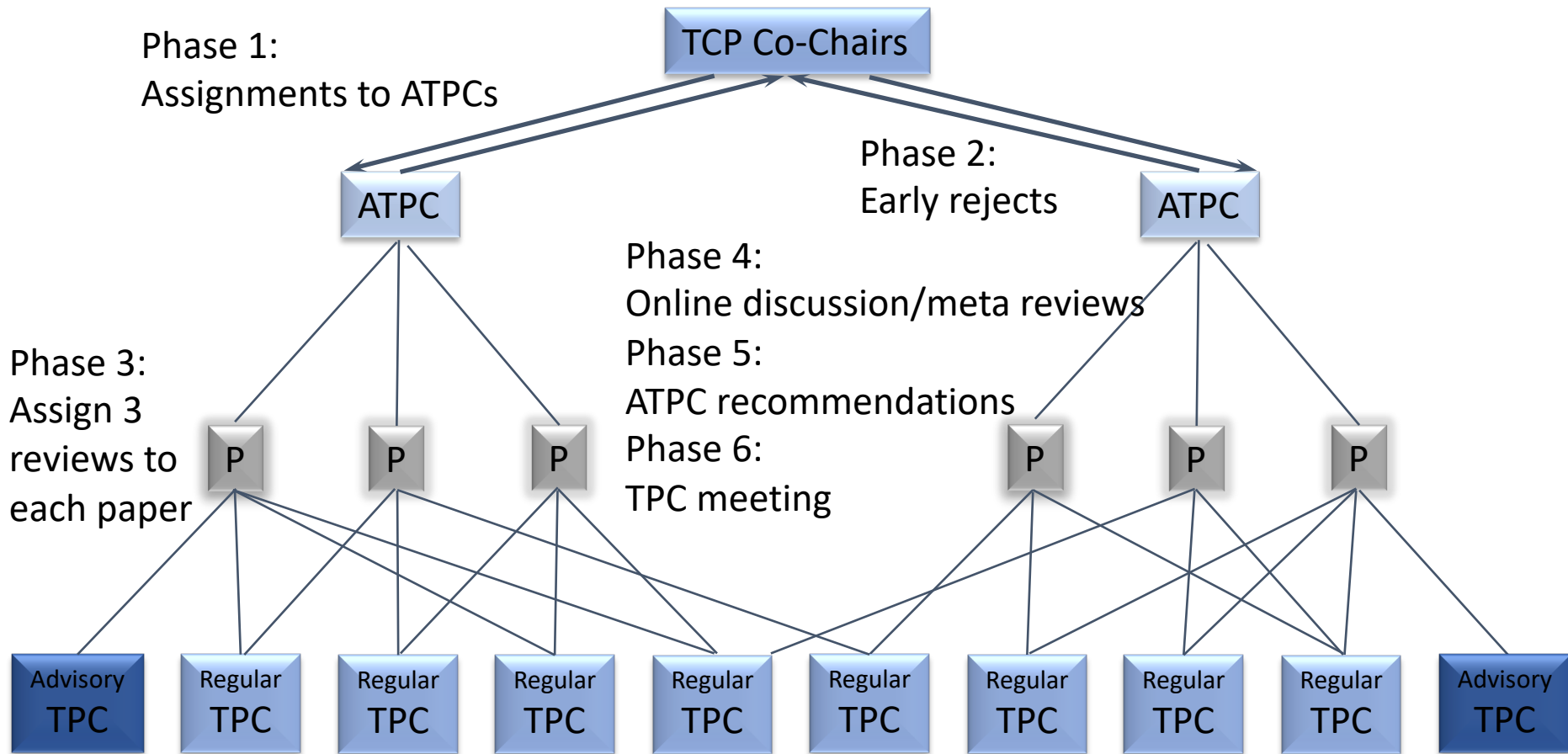
Jian Tang (Syracuse University)

Goals for INFOCOM 2019

- Continue the success of previous INFOCOMs
- Our responsibility: strong technical program
  - Attract high-quality submissions
  - Ensure high-quality, constructive reviews
  - Implement a fair selection process

Outline

- Review process overview

- Specific duties
  - Area TPC chairs
  - Regular TPC members
  - Advisory TPC members

- Reviews and ranking

Review Process in a Nutshell

Phase 1:
Assignments to ATPCs

TCP Co-Chairs

Phase 2:
Early rejects

ATPC

ATPC

Phase 4:
Online discussion/meta reviews

Phase 3:
Assign 3
reviews to
each paper

P   P   P

Phase 5:
ATPC recommendations

Phase 6:
TPC meeting

P   P   P

Advisory **TPC**

Regular **TPC**

Regular **TPC**

Regular **TPC**

Regular **TPC**

Regular **TPC**

Regular **TPC**

Regular **TPC**

Regular **TPC**

Advisory **TPC**

Technical Program Committee

	2015	2016	2017	2018	2019
Area TPC Chairs	46	51	50	50	50
Regular TPC Members	374	554	501	422	~450
Advisory TPC Member	37	41	48	50	~50

TPC Diversity Statistics – Area Chairs

type			country			gender	
academia	43		USA	33		M	42
industry	4		Italy	4		F	8
government	2		Germany	2			
NGO	1		Spain	2			
			Hong Kong	2			
			Canada	2			
			P.R. China	2			
			United Kingdom	1			
			France	1			
			Sweden	1			

TPC Diversity Statistics – Members

type			country					gender	
academia	410		USA	216	Austria	4		M	314
industry	27		P.R. China	52	The Netherlands	4		F	52
government	3		Italy	31	Portugal	3		unidentified	75
NGO	1		Canada	15	Finland	3			
			France	12	Israel	3			
			Hong Kong	12	Sweden	3			
			Germany	12	Egypt	2			
			Spain	10	Australia	2			
			Singapore	9	Japan	2			
			Korea	9	India	2			
			United Kingdom	7	Qatar	1			
			Brazil	5	Colombia	1			
			Taiwan	5	Ireland	1			
			Greece	4	Russia	1			
			Turkey	4	Belgium	1			
			Switzerland	4	Norway	1			

Workload

	2015	2016	2017	2018	2019
Area TPC Chairs	~ 40	~ 35	~ 30	~ 30	~ 30
Regular TPC Members	~ 15	~ 10	~ 8	~ 12	~ 11
Advisory TPC Member	-	-	-	~ 5	~ 5

TPC Area Chair Tasks

- Upload your signature papers (May 15)
- Oversee the review of about 30 papers
- "Early reject"
  - Clearly out of scope
  - Violating the double-blind policy
- Identify low-quality reviews
  - Lacking on substance
  - Request the reviewers to revise and substantiate their reviews

TPC Area Chair Tasks

- Supervise the discussions
  - Intervene if the TPC-Lead is not effective
- Ensure meta review quality
  - Consistent with the reviews and discussions
- Assign additional reviews from advisory TPC
  - If existing reviews do not reach consensus
  - To make up missing reviews
    - Three or more reviews for each paper
- Communicate problems to the TPC co-chairs as early as possible

TPC Area Chair Tasks

- Recommendations to the TPC Co-Chairs
  - Accept, reject, discuss at the TPC meeting
- Participate in the TPC meeting
  - Lead group discussions
  - Tempe, AZ, USA at Arizona State University
- Rate the reviews
- Serve as session chair

Regular TPC Member Tasks

- Upload your signature papers (May 15)
- Review about 12 papers
  - Cannot decline the review assignments …
  - … unless COI not recorded in EDAS (let us know ASAP)
- Can delegate up to 4 papers to experts
  - Not your students, please
- Serve as TPC-lead (meta reviewer)
  - About 4 papers
- Start and participate in discussion
  - TPC-lead responsible for driving discussion
  - Fine to change your review/scores, if appropriate

Regular TPC Member Tasks

- Rate the peer reviews
- Rank your papers
  - Baochun will explain more later ...
- Attend the TPC meeting if not impossible
  - Tempe, AZ, USA at Arizona State University

Advisory TPC Member Tasks

- Upload your signature papers (May 15)
- Will be assigned reviews during discussion phase
- Review about ≤ 5 papers
  - Cannot decline the review assignments
- Your review is critical:
  - Papers with controversial existing reviews, missing reviews
  - IEEE ComSoc requires 3 reviews for each submission
- Join the discussion after completing review
- Rate the peer reviews
- Rank your papers
- Attend the TPC meeting if possible

Important Dates

- Upload your papers: May 15
- Paper registration/submission: July 24/31
- Paper review assignments
  - To ATPC: August 7
  - Early rejects: August 14
  - Assignment to regular TPC members: August 21
- Reviews
  - Reviews due: October 5
  - Online discussion: October 6 – October 21
  - Meta-reviews due: October 22
  - ATPC recommendation due: October 29
- TPC meeting in Tempe, AZ: November 17
- Notification: November 30

Conflict of Interest and Triple-Blind Review Policy

- COI is taken into account in review assignments
- Author names are blind to ATPCs and TPC members
- Reviewer names are blind to authors
- Reviewer names are blind to ATPCs and peer reviewers
- You can still send email to a specific TPC member through EDAS

Review Assignments

- Upload your signature papers (Deadline: May 15)
  - Select ~ 30 papers that best represent your expertise and interest
    - Can be published at any time, but must be your own papers
  - Upload the PDF files to a server
  - Existing TPC members: time to update your files
  - Key step for high quality reviews
- Make sure your email (as in EDAS) works
  - Full mailbox? Email alias? Spam filter …
  - Emergency contact information is strongly encouraged
- Update your COI information in EDAS

Review Assignments

- **Erie** review assignment system

  - Use **Latent Semantic Indexing** to compute the suitability score between a submitted paper and a reviewer's representative papers

  - Solve an optimization problem that maximizes the total suitability score across all submitted papers to the conference

- Fully tested at INFOCOM 2015, 2016, 2017, 2018

B. Li and Y. T. Hou. "The new automated INFOCOM review assignment system," IEEE Network, vol. 30, no. 5, pp. 18-24, September–October 2016.

Ranking Papers

Each TPC member rank his/her own batch of papers to be reviewed

Use an algorithm to convert **local** to **global** ranking

Paper #1: (3, 3, 2), ranked 136
Paper #2: (3, 2, 2), ranked 457
Paper #3: (3, 3, 3), ranked 980
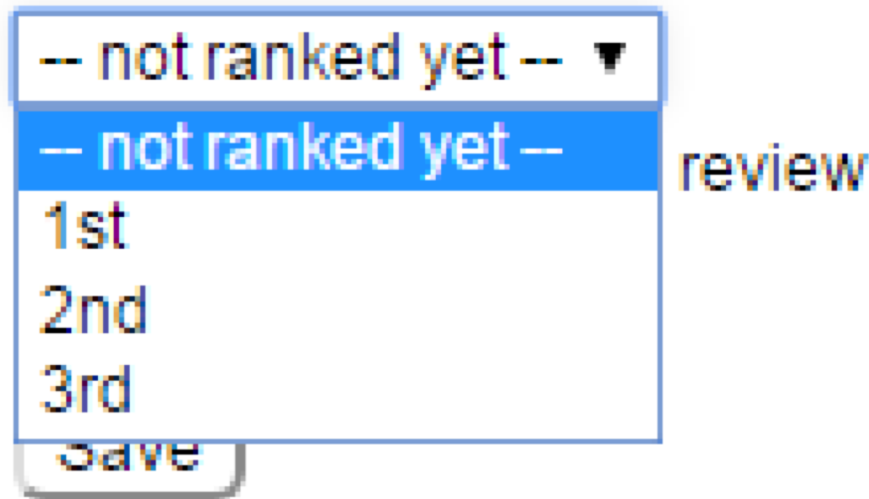
EDAS: ranking papers

In the paper review form, you may enter an initial rank for each paper —

Ranking: Ranking - unique across your papers ⌶

-- not ranked yet -- ▼
-- not ranked yet --
1st
2nd
3rd

review

Save

EDAS: hidden treasure

Can you find a **double arrow** in this figure?

EDAS: ranking papers

Hidden treasure in EDAS: an easy-to-use drag-and-drop interface to adjust your own rankings of papers

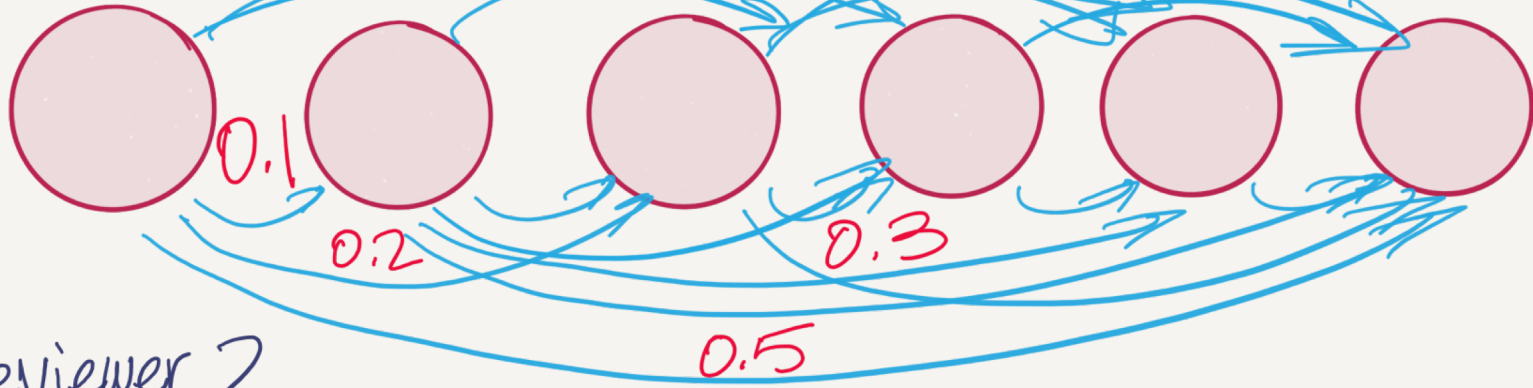# INFOCOM 2018 TPC meeting: the Schulze method

Widely used algorithm to solve this well-known problem in social choice theory

Polynomial time algorithm: **O(n³)**, where **n** is the number of papers — took **1.5 hours** for 1600 papers and 19000 preference pairs
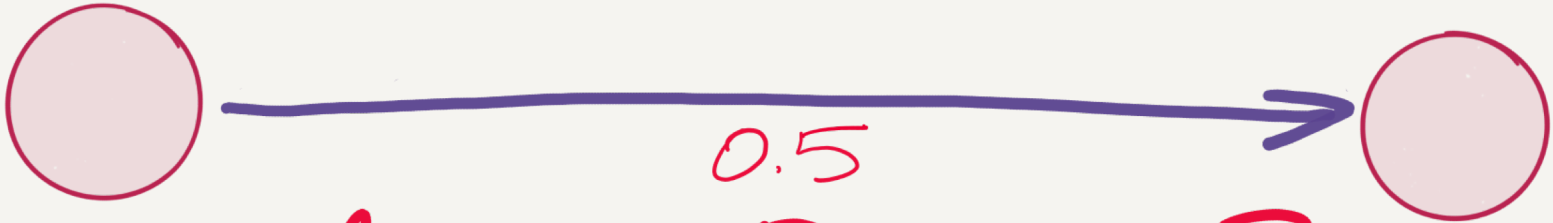
A long list of desirable properties

Used by **hotcrp.com** as its default ranking algorithm

Distance bonus

Use the Floyd-Warshall algorithm to find the strongest path between all pairs of papers

For every pair of papers, compare the strongest path in both directions to see who the winner is

Rank papers based on the number of wins against all other papers

INFOCOM 2019 TPC meeting: New ranking algorithm based on spectrum ranking

Spectrum Ranking

- **PageRank** (Page, *et al.*, 1998): ranks web pages according to the stationary distribution of a random walk on the hyperlink graph

- **Rank Centrality** (Negahban, *et al.*, NIPS 2012): an algorithm for aggregating pair-wise comparisons using the stationary distribution of a Markov chain

- **Luce Spectrum Ranking** (Maystre *et al.,* NIPS 2015): extending Rank Centrality for aggregating partial rankings — it's not a good idea to simply break them into pair-wise rankings
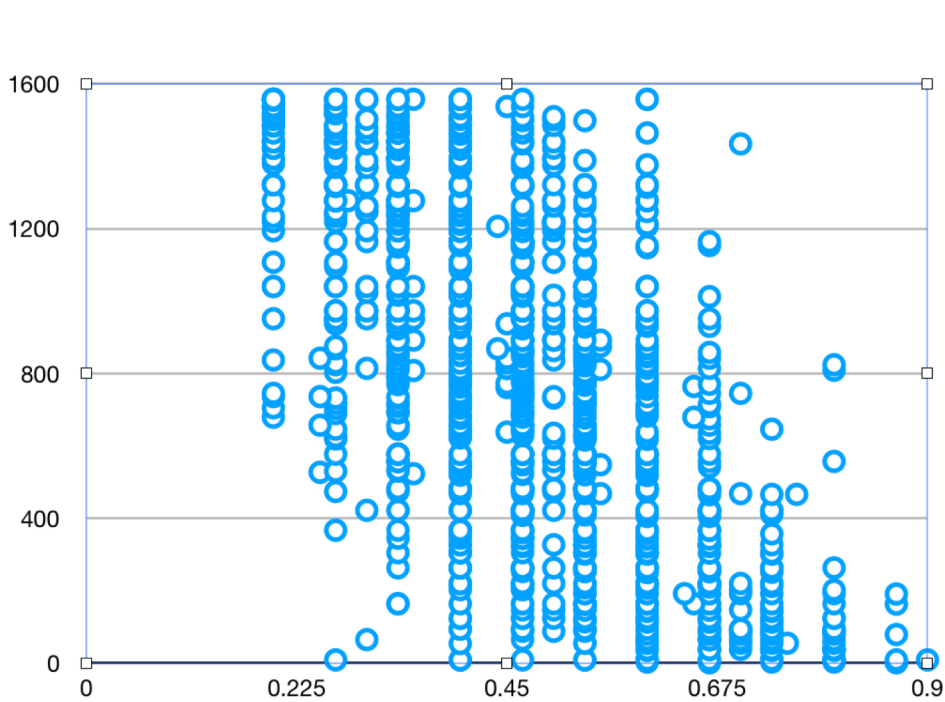
Luce Spectrum Ranking

- Maystre and Grossglauser, "Fast and Accurate Inference of Plackett–Luce Models," NIPS 2015

- **Key insight:** Builds a Markov chain that breaks rankings into pairwise rate contributions, but weights the contributions differently depending on the rank of the winning item
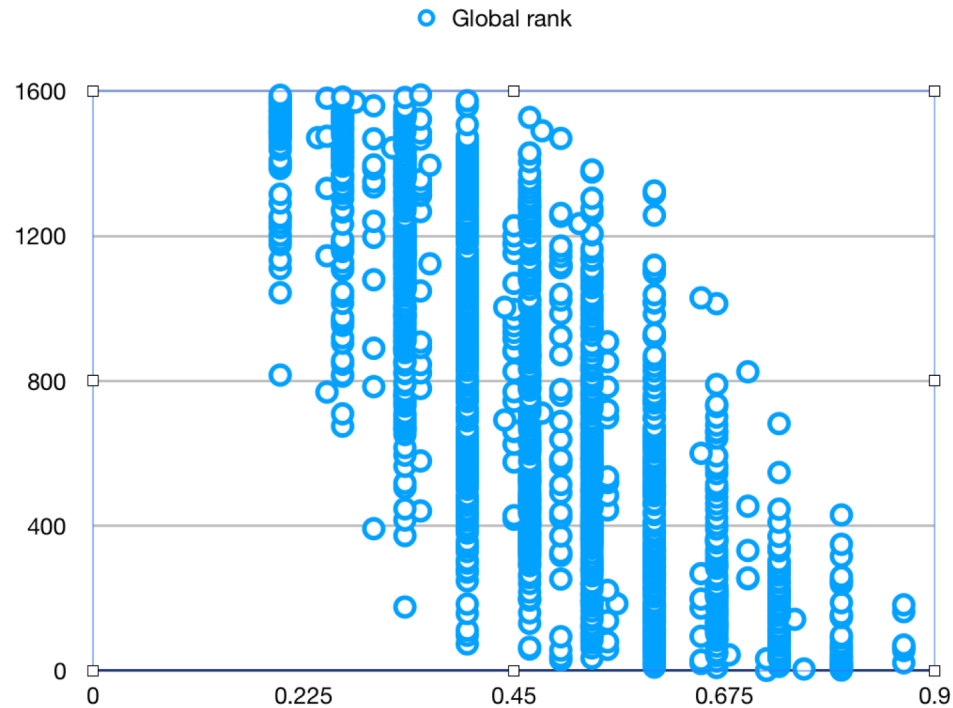
Luce Spectrum Ranking

- Computationally efficient with large datasets

  - The key step, finding a stationary distribution, can be offloaded to commonly available linear-algebra primitives

  - By leveraging a connection between the maximum-likelihood (ML) estimate and the stationary distribution of a Markov chain

Applying Luce Spectrum Ranking on 1600 papers and 19000 pairwise comparisons:
0.23 seconds

Comparison: Schulze vs. LSR

Schulze

Luce Spectrum Ranking

Comparison: Schulze vs. LSR

the **average rank** of all accepted papers in INFOCOM 2018

358

320

Schulze

Luce Spectrum Ranking

High-Quality and Timely Reviews

- Critical for the success of the conference
- Please do your reviews and meet the deadline
- Review with the quality that you would like to receive for your own papers
- Be fair and open-minded
  - Papers that reflect forward thinking on emerging topics, more likely to attract audiences and citations
  - Papers that involve rigorous real-world system implementations
  - Papers that propose sound theoretical contributions with practical implication

High-Quality and Timely Reviews

- Keep your assignments/reviews confidential
- Delegate to qualified (non-student) reviewers under the following conditions
    - Done within two weeks of the review assignment
    - Personally ensure the delegated review quality
        - Timely and high-quality review
    - Present opinion of delegate reviewer if the paper is discussed at TPC meeting

Rate Reviews

- Reviews will be rated
  - Ratings by Regular/Advisory TPC members and ATPCs

- Distinguished TPC members will be recognized
  - Based on own reviews as well as delegated reviews
  - Identified on conference website

Questions?

- Contact us anytime
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  - Tilman Wolf: wolf@umass.edu