Algorithmic Greenlining: An Approach to Increase Diversity

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Joint work with

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Optimizing diversity & quality

**Goal**: Help practitioner develop selection criteria
- E.g., college admissions, image search, job search
- Should yield high-quality and diverse results

**Challenge**: Each criterion’s true quality unknown
- E.g., “future success” of admitted college students
- Difficult to optimize for quality and diversity
- Decision-maker must rely on heuristics and intuition
Our algorithmic framework

• Expert chooses criterion
  • E.g., job applicant search for “chairman”
• Suggests similar criteria with better diversity
• Relies on:
  • Application-specific criteria similarity function
  • Way to measure diversity of any criterion's results

Tip: if you search for chairperson, you’ll see 50% more female applicants.
Our algorithmic framework

- Expert chooses criterion
  - E.g., job applicant search for “chairman”
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  - Application-specific criteria similarity function
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Optimize similarity function while meeting diversity constraint
Experiments

- College admissions
- Image search
- Job applicant search
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