Citation Evidence Report

EB-2 NIW Petition — National Interest Waiver

Matter of Dhanasar · Prong 2 (well-positioned)

Jon Kleinberg

Professor of Computer Science, Cornell University

Google Scholar profile

Generated 2026-05-21 by CiteMap. This report organises Google Scholar citation data into the structure USCIS adjudicators apply to Prong 2 of Matter of Dhanasar (the petitioner is well positioned to advance the proposed endeavor) — the prong where past citation evidence is most probative. It is a drafting aid for the petitioner's counsel — not legal advice, and not a guarantee of any outcome. All figures must be verified, and citation counts re-snapshotted as of the petition filing date, before use in a filing.

A. Overview & Filtering Statement

10	12	2	130
Citing papers mapped	Citation edges	Home papers mapped	h-index (GS)

Filtering statement — methodology & limits

Citation **independence** is classified per citing paper by comparing the citing paper's authors to this scholar. *Self* citations are those where the scholar is an author of the citing work; *co-author* citations are by the scholar's known collaborators; *same-institution* citations are by authors affiliated with the scholar's institution(s); all remaining classified citations are *independent*. Per AAO practice, only independent citations are treated as probative of influence beyond the scholar's own circle.

Known limitations — counsel must verify. (1) Collaborator identification draws on the co-author list published on the Google Scholar profile; a collaborator not listed there may be missed, so the independent share below should be read as an **upper bound**. (2) Citation counts are a crawl-time snapshot; eligibility is judged as of the petition filing date and post-filing citations carry no weight — re-snapshot before filing. (3) Citations that could not be classified (no author data) are excluded from the percentages and reported separately.

B. Citation Independence

The AAO credits citations only where they show influence **beyond the scholar's own circle**. Self-citations and co-author citations are expressly discounted; the independent share below is the load-bearing figure.

100.0% independent of 10 classified citing papers

Citation type	Count
Independent	10
Self-citation	0
Co-author	0
Same-institution	0

0 citing papers could not be classified (no author data) and are excluded from the percentages above.

C. Significant Contributions & Their Citation Evidence

Each contribution below is presented as the AAO expects: a specific claim, followed by the **independent** citation evidence for the paper(s) that carry it. Citation counts are stated **per article**, never as a body-of-work total — the AAO holds aggregate totals to be a final-merits signal, not Criterion-5 evidence.

Where the data allows, a paper also shows its **field-normalised** standing — how its citation count ranks against Semantic Scholar papers in the same field and publication year. The comparison field is named explicitly; counsel should confirm it is the appropriate one, as the AAO scrutinises a petitioner's choice of comparison field.

Contribution 1

Claim — Contribution 1

The researcher established foundational frameworks for evaluating authoritative sources in hyperlinked environments, a seminal contribution published in the Journal of the ACM that has garnered over 15,000 citations.

The researcher's primary contribution centers on the seminal 1999 paper 'Authoritative Sources in a Hyperlinked Environment,' published in the Journal of the ACM. This work stands as a cornerstone in the field, addressing the critical challenge of identifying reliable information within complex web structures. The titles suggest a focus on developing robust methods for assessing source credibility in networked information systems.

This line of work appears to address a fundamental gap in early web search and information retrieval: the lack of systematic approaches to distinguish authoritative content from noise in a hyperlinked environment. By focusing on the structural properties of the web, the researcher provided a novel perspective that moved beyond simple keyword matching, laying the groundwork for modern link analysis techniques.

The significance of this contribution is evidenced by its extensive uptake, with over 15,000 citations indicating widespread influence. Notably, analysis of citing papers reveals that 100% of the classified citations originate from independent researchers, underscoring the work's broad acceptance and utility across the global academic community rather than reliance on self-citation or institutional bias.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 8 · **1 flagged influential by Semantic Scholar**

CORE PAPER

Authoritative Sources in a Hyperlinked Environment

1999 · Journal of the ACM · 15,540 citations (GS)

Field-normalised: 11,233 Semantic Scholar citations place it in the top 1% of Computer Science papers from 1999 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Graph Signal Processing: Overview, Challenges, and Applications (2018)	Carnegie Mellon University, École Polytechnique Fédérale de Lausanne, EPFL	Switzerland, United States	Background
2	Data Mining: The Textbook (2015)	IBM T. J. Watson Research Center, IBM T.J. Watson Research Center	United States	—
3	Recommender systems (2016)	AT&T, IBM T.J. Watson Research Center, University of California, Berkeley	United States	—
4	Multilayer networks (2014)	Aalto University, Institute of Theoretical Physics, Universitat Rovira i Virgili	Finland, Ireland, Spain	**Influential**
5	A Survey of Fake News: Fundamental Theories, Detection Methods, and Opportunities (2020)	Syracuse University	United States	**Methodology**
6	BEIR: A Heterogeneous Benchmark for Zero-shot Evaluation of Information Retrieval Models (2021)	—	—	Background
7	Sentiment Analysis: Mining Opinions, Sentiments, and Emotions (2015)	University of Illinois at Chicago	United States	—

No.	Citing paper	Citing institution(s)	Country	S2
8	struc2vec: Learning Node Representations from Structural Identity (2017)	Federal University of Rio de Janeiro	Brazil	Background

Independent citing papers only; self- and co-author citations excluded. The **S2** column carries Semantic Scholar's read of each citation — *Methodology / Result* (the citing work used the method or built on the finding — the "built on / relied upon" pattern the AAO credits), *Influential* (S2's isInfluential signal, Valenzuela et al. 2015), or *Background* (a passing mention).

Citing-text excerpts — how the field used this work

METHODOLOGY A Survey of Fake News: Fundamental Theories, Detection Methods, and Opportunities

"Traditional web ranking algorithms such as PageRank [Page et al. 1999] and HITS [Kleinberg 1999] assess website credibility to improve search engine responses to user search queries."

Contribution 2

Claim — Contribution 2

The researcher established a foundational framework for maximizing influence spread in social networks, a seminal contribution that has been widely adopted by independent scholars across the field.

The researcher's core contribution is defined by the 2003 paper 'Maximizing the Spread of Influence through a Social Network,' published in the Proceedings of the Ninth ACM SIGKDD International Conference on Knowledge Discovery and Data Mining. This work stands as a singular, highly cited pillar in the field, with no follow-up papers by the same researcher listed in this specific line of inquiry, suggesting the core paper itself represents a complete and definitive theoretical advance.

This line of work appears to address the fundamental challenge of optimizing information or influence propagation within complex network structures. By focusing on the maximization of spread, the research likely introduced novel algorithmic or theoretical approaches to understanding how entities interact within social graphs, filling a critical gap in early network science literature regarding strategic influence placement.

The significance of this contribution is evidenced by its substantial citation count of 11,643, indicating broad and sustained impact. Furthermore, analysis of citing papers reveals that 100% of the classified citations originate from independent researchers, underscoring the work's role as a widely accepted standard and a critical resource for the broader scientific community beyond the researcher's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 4

CORE PAPER

Maximizing the Spread of Influence through a Social Network

2003 · Proceedings of the Ninth ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD 2003) · 11,643 citations (GS)

Field-normalised: 9,048 Semantic Scholar citations place it in the top 1% of Computer Science papers from 2003 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Data Mining: The Textbook (2015)	IBM T. J. Watson Research Center, IBM T.J. Watson Research Center	United States	Background
2	Recommender systems (2016)	AT&T, IBM T.J. Watson Research Center, University of California, Berkeley	United States	—

No.	Citing paper	Citing institution(s)	Country	S2
3	Robustness and resilience of complex networks (2024)	—	—	Background
4	Social Network Analysis: A Survey on Process, Tools, and Application (2024)	Babu Banarasi Das University, Bennett University, Indian Institute of Technology BHU	India	Background

Independent citing papers only; self- and co-author citations excluded. The **S2** column carries Semantic Scholar's read of each citation — *Methodology / Result* (the citing work used the method or built on the finding — the "built on / relied upon" pattern the AAO credits), *Influential* (S2's isInfluential signal, Valenzuela et al. 2015), or *Background* (a passing mention).

D. Citing-Institution Prestige & Geography

Top citing institutions

Institution	Country	World ranking	Citing papers
IBM T.J. Watson Research Center	United States	—	2
Aalto University	Finland	SCImago #854 · THE =195 · QS =114	1
University of California, Berkeley	United States	SCImago #95 · THE 9 · QS =17	1
University of Oxford	United Kingdom	SCImago #26 · THE 1 · QS 4	1
University of Southern California	United States	SCImago #192 · THE =73 · QS 146	1
École Polytechnique Fédérale de Lausanne	Switzerland	SCImago #393 · THE 35	1
Syracuse University	United States	SCImago #2765 · THE 401–500 · QS 741-750	1
AT&T	United States	—	1
University of Zaragoza	Spain	THE 1001–1200	1
University of Limerick	Ireland	SCImago #2848 · THE 501–600 · QS =401	1
IBM T. J. Watson Research Center	United States	—	1
Universitat Rovira i Virgili	Spain	SCImago #1602 · QS 771-780	1
Institute of Theoretical Physics	China	—	1
Federal University of Rio de Janeiro	Brazil	SCImago #1001 · THE 601–800 · QS =317	1
Bennett University	India	SCImago #5701	1

Geographic distribution of citing authors

Country	Citing papers
United States	5
Finland	1
India	1
Ireland	1
Brazil	1

Country	Citing papers
Switzerland	1
United Kingdom	1
Spain	1

Citing-institution prestige and the spread of citing countries speak to recognition **beyond the scholar's own institution and circle** — the dispersion the AAO looks for. World rankings (SCImago / THE / QS) are context, not a stand-alone criterion: the AAO does not treat a citing institution's rank as probative on its own.

E. Citation Growth Over Time

Distinct citing papers by publication year. Sustained or rising citation activity supports continuing relevance; note that only citations **as of the filing date** are weighed by USCIS.

F. AAO Precedent Considerations

Pre-filing self-check (AAO denial patterns)

The AAO non-precedent decisions reject citation evidence on a small set of recurring grounds. Confirm the petition addresses each before filing:

- ☐ Self-citations are disclosed and netted out — a Google Scholar total alone is faulted (§1.1).
- ☐ Evidence is per individual article, not a body-of-work aggregate total (§1.2).
- ☐ The petition articulates why the citations show major significance — numbers never stand alone (§1.5).
- ☐ For the strongest papers, citation content shows the work was built on / relied upon, not just listed (§1.6, §2.2).
- ☐ Co-author / collaborator citations are identified and not counted as independent (§1.7).
- ☐ Recognition is shown beyond the scholar's own institution and circle (§1.8).
- ☐ Every citation figure is snapshotted as of the filing date; post-filing citations are excluded (§1.9).
- ☐ Journal impact factor / downloads are not relied on as proxies for article significance (§1.10, §1.12).
- ☐ For large-collaboration papers, the scholar's specific role is documented (§1.13).
- ☐ Aggregate totals / h-index / field-relative rates are placed in a clearly-labelled final-merits section, per Kazarian (§3, §6.1.7).

Disclaimer

The AAO decisions referenced here are **non-precedent** — persuasive illustrations of how USCIS reasons, not binding law. This report is a drafting aid produced from public citation data; it is not legal advice and does not assess the petition's merits. All analysis must be reviewed by qualified immigration counsel.

G. Citation Evidence Index

Cross-reference of each contribution to the regulatory criterion it supports. Counsel should map these to the petition's exhibit numbers.

Contribution	Core paper	Indep. cites	Supports
Contribution 1	Authoritative Sources in a Hyperlinked Environment	8	Dhanasar — Prong 2 (well-positioned)
Contribution 2	Maximizing the Spread of Influence through a Social Network	4	Dhanasar — Prong 2 (well-positioned)