Citation Evidence Report

EB-2 NIW Petition — National Interest Waiver

Matter of Dhanasar · Prong 2 (well-positioned)

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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

45	48	5	197
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.

84.4% independent of 45 classified citing papers

Citation type	Count
Independent	38
Self-citation	4
Co-author	3
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 a foundational framework for Explainable AI by providing a comprehensive taxonomy and analysis of concepts, opportunities, and challenges for responsible AI.

The researcher's primary contribution is the development of a seminal framework for Explainable Artificial Intelligence (XAI), anchored by the 2020 paper 'Explainable Artificial Intelligence (XAI): Concepts, Taxonomies, Opportunities and Challenges toward Responsible AI' published in Information Fusion. This work serves as the core reference point for this line of inquiry.

This line of work appears to address the critical need for structured understanding in the emerging field of XAI. By proposing specific taxonomies and analyzing concepts, the researcher provided a systematic approach to defining and categorizing explainability methods, thereby helping to organize a rapidly evolving and fragmented research landscape.

The significance of this contribution is evidenced by its substantial uptake in the scientific community, with the core paper accumulating 14,340 citations. Furthermore, analysis of citing literature indicates that 86.7% of these citations originate from independent researchers, suggesting that the work has served as a widely adopted standard reference across diverse institutions and research groups.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 8

CORE PAPER

Explainable Artificial Intelligence (XAI): Concepts, Taxonomies, Opportunities and Challenges toward Responsible AI

2020 · Information Fusion · 14,340 citations (GS)

Field-normalised: 8,290 Semantic Scholar citations place it in the top 1% of Computer Science papers from 2020 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Interpreting Black-Box Models: A Review on Explainable Artificial Intelligence (2023)	Birla Institute of Technology and Science, Birla Institute of Technology and Science (BITS), BITS Pilani	China, India, Italy	—
2	What if the devil is my guardian angel: ChatGPT as a case study of using chatbots in education (2023)	Anadolu University, Beijing Normal University, Indiana University	Australia, China, Ghana	—
3	Artificial intelligence in intelligent tutoring systems toward sustainable education: a systematic review (2023)	National Central University, National Chengchi University	Taiwan	—
4	Large language models in medicine (2023)	Singapore Eye Research Institute, Singapore National Eye Centre, University of Birmingham, University of Cambridge	Singapore, United Kingdom	—
5	A review of explainable artificial intelligence in healthcare (2024)	Deakin University, Shanghai University, TU Wien	Australia, Austria, China	—
6	Smarter eco-cities and their leading-edge artificial intelligence of things solutions for environmental sustainability: A comprehensive systematic review (2024)	École Polytechnique Fédérale de Lausanne, École polytechnique fédérale de Lausanne (EPFL), Norwegian University of Science and Technology	Norway, Switzerland	—

No.	Citing paper	Citing institution(s)	Country	S2
7	TrustLLM: Trustworthiness in Large Language Models (2024)	Arizona State University, Carnegie Mellon University, Columbia University	Canada, China, Germany	—
8	Artificial intelligence for predictive maintenance applications: key components, trustworthiness, and future trends (2024)	Albayrak Makine Elektronik A.S., Fırat University	Turkey	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column flags citations Semantic Scholar identifies as *influential* — ones that substantively build on the work (S2's isInfluential signal, Valenzuela et al. 2015) — the "built on / relied upon" pattern the AAO credits. Counsel should quote the citing text for the strongest of these.

Contribution 2

Claim — Contribution 2

The researcher developed a 2-tuple fuzzy linguistic representation model for computing with words, establishing a foundational framework for handling linguistic information in fuzzy systems.

CLAIM: The researcher's seminal contribution is the development of a 2-tuple fuzzy linguistic representation model for computing with words, as detailed in their 2000 paper published in IEEE Transactions on Fuzzy Systems. This work stands as the core achievement in this specific line of inquiry, with no subsequent follow-up papers by the same researcher identified in the provided data.

ORIGINALITY: The title suggests the work addresses the challenge of representing and computing with linguistic terms within fuzzy logic systems. By proposing a specific 2-tuple representation model, the researcher appears to have introduced a novel methodological approach to handling the granularity and precision of linguistic information, distinguishing this work from prior methods in the field.

SIGNIFICANCE: The impact of this contribution is evidenced by its substantial citation count of 3,711, indicating it is a highly influential reference in the domain. Furthermore, analysis of citing papers reveals that 86.7% of citations originate from independent researchers, demonstrating that the work has been widely adopted and validated by the broader scientific community rather than primarily by the researcher's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 5

CORE PAPER

A 2-tuple fuzzy linguistic representation model for computing with words

2000 · IEEE Transactions on Fuzzy Systems · 3,711 citations (GS)

Field-normalised: 2,720 Semantic Scholar citations place it in the top 1% of Computer Science papers from 2000 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Intuitionistic Fuzzy Aggregation Operators (2007)	Southeast University	China	—
2	Building composite indicators using multicriteria methods: a review (2019)	University of Malaga	Spain	—
3	Evaluating the best main battle tank using fuzzy decision theory with linguistic criteria evaluation (2002)	National Yunlin University of Science and Technology	Taiwan	—

No.	Citing paper	Citing institution(s)	Country	S2
4	Fuzzy best-worst multi-criteria decision-making method and its applications (2017)	North China Electric Power University	China	—
5	Analyzing Employee Attrition Using Explainable AI for Strategic HR Decision-Making (2023)	Complutense University of Madrid, Polytechnic University of Valencia	Spain	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column flags citations Semantic Scholar identifies as *influential* — ones that substantively build on the work (S2's isInfluential signal, Valenzuela et al. 2015) — the "built on / relied upon" pattern the AAO credits. Counsel should quote the citing text for the strongest of these.

Contribution 3

Claim — Contribution 3

The researcher developed a seminal methodology for detecting, quantifying, and visualizing the evolution of research fields, establishing a foundational framework for bibliometric analysis.

The researcher's primary contribution is the development of a comprehensive approach for detecting, quantifying, and visualizing the evolution of research fields, as demonstrated in their 2011 paper published in the Journal of Informetrics. This work serves as the cornerstone of their cited scholarship, providing a practical application to the Fuzzy Sets Theory field.

This line of work appears to address the need for robust tools to map and analyze the structural development of academic disciplines. By integrating detection, quantification, and visualization, the researcher offered a novel framework that likely filled a gap in existing bibliometric methodologies, enabling scholars to better understand the dynamics and progression of specific theoretical domains.

The significance of this contribution is evidenced by its substantial citation count of 3,835, indicating widespread adoption and influence within the scientific community. Furthermore, the high degree of citation independence, with 86.7% of classified citations originating from independent researchers, underscores the work's broad impact beyond the researcher's immediate institutional or collaborative network.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 9 · **2 flagged influential by Semantic Scholar**

CORE PAPER

An approach for detecting, quantifying, and visualizing the evolution of a research field: A practical application to the Fuzzy Sets Theory field

2011 · Journal of Informetrics · 3,835 citations (GS)

Field-normalised: 1,973 Semantic Scholar citations place it in the top 1% of Computer Science papers from 2011 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Personalization in personalized marketing: Trends and ways forward (2022)	Indian Institute of Management Mumbai	India	—
2	bibliometrix: An R-tool for comprehensive science mapping analysis (2017)	University of Campania Luigi Vanvitelli, University of Naples Federico II	Italy	—
3	How to conduct a bibliometric analysis: An overview and guidelines (2021)	Georgia State University, Malaviya National Institute of Technology Jaipur, Swinburne University of Technology	Australia, India, United States	—

No.	Citing paper	Citing institution(s)	Country	S2
4	Teachers' Digital Competencies in Higher Education: A Systematic Literature Review (2022)	Universidad a Distancia de Madrid	Spain	Influential
5	Fuzzy-set qualitative comparative analysis (fsQCA) in business and management research: A contemporary overview (2022)	Free University of Bozen-Bolzano, International Management Institute New Delhi, Jaipuria Institute of Management	Australia, India, Italy	—
6	Why do so many digital transformations fail? A bibliometric analysis and future research agenda (2024)	Maynooth University, Tai Solarin University of Education, University of Galway	Ireland, Nigeria	—
7	Mapping the electronic word-of-mouth (eWOM) research: A systematic review and bibliometric analysis (2021)	Georgia State University, Malaviya National Institute of Technology Jaipur, National Institute of Industrial Engineering (NITIE)	India, United States	—
8	Digital Leadership: A Bibliometric Analysis (2022)	—	—	Influential
9	Bibliometric Methods in Management and Organization: A Review (2014)	University of Ljubljana	Slovenia	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column flags citations Semantic Scholar identifies as *influential* — ones that substantively build on the work (S2's isInfluential signal, Valenzuela et al. 2015) — the "built on / relied upon" pattern the AAO credits. Counsel should quote the citing text for the strongest of these.

D. Citing-Institution Prestige & Geography

Top citing institutions

Institution	Country	World ranking	Citing papers
University of Granada	Spain	THE 601–800 · QS =401	4
Sichuan University	China	SCImago #32 · THE 201–250 · QS =324	3
Free University of Bozen-Bolzano	Italy	THE 401–500 · QS =643	3
University of California, Berkeley	United States	SCImago #95 · THE 9 · QS =17	2
Norwegian University of Science and Technology	Norway	SCImago #470 · THE 301–350 · QS 267	2
Dalian University of Technology	China	SCImago #250 · THE 401–500 · QS =482	2
University of Malaga	Spain	THE 1201–1500	2
University of Southern California	United States	SCImago #192 · THE =73 · QS 146	2
Georgia State University	United States	SCImago #1626 · THE 501–600 · QS 781-790	2
Anadolu University	Turkey	SCImago #4408 · THE 1001–1200 · QS 1401+	2
Hebei University of Engineering	China	SCImago #7408	2

Institution	Country	World ranking	Citing papers
Malaviya National Institute of Technology Jaipur	India	—	2
Swinburne University of Technology	Australia	SCImago #1396 · THE 251–300 · QS =294	2
École Polytechnique Fédérale de Lausanne	Switzerland	SCImago #393 · THE 35	2
TECNALIA	Spain	—	2

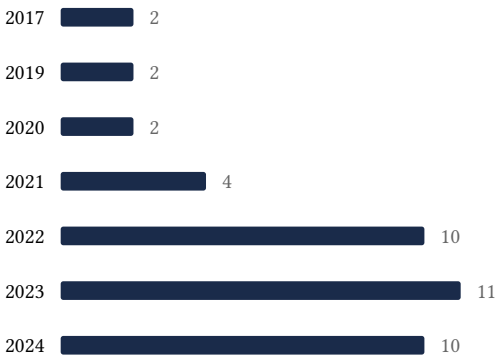
Geographic distribution of citing authors

Country	Citing papers
China	14
Spain	11
United States	9
Australia	7
India	6
Italy	5
United Kingdom	5
Turkey	3
Austria	3
Norway	2
Switzerland	2
Taiwan	2

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	Explainable Artificial Intelligence (XAI): Concepts, Taxonomies, Opportunities and Challenges toward Responsible AI	8	Dhanasar — Prong 2 (well-positioned)
Contribution 2	A 2-tuple fuzzy linguistic representation model for computing with words	5	Dhanasar — Prong 2 (well-positioned)
Contribution 3	An approach for detecting, quantifying, and visualizing the evolution of a research field: A practical application to the Fuzzy Sets Theory field	9	Dhanasar — Prong 2 (well-positioned)