Citation Evidence Report

EB-1B Petition — Outstanding Professor or Researcher

8 CFR § 204.5(i)(3) · Authorship + Original Contributions

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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 the 8 CFR § 204.5(i)(3) outstanding-researcher criteria — particularly (iii) published material and (v) original scientific or scholarly contributions. 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

13	13	2	87
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.

84.6% independent of 13 classified citing papers

Citation type	Count
Independent	11
Self-citation	0
Co-author	2
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 the theoretical equivalence between vague sets and intuitionistic fuzzy sets, providing a foundational clarification in fuzzy logic theory.

The researcher's primary contribution is the demonstration that vague sets are equivalent to intuitionistic fuzzy sets, as articulated in the seminal 1996 paper published in Fuzzy Sets and Systems. This work serves as the cornerstone of this specific line of inquiry, with no subsequent follow-up papers by the researcher listed in the provided data.

This contribution appears to address a conceptual ambiguity or redundancy in the literature by unifying two distinct frameworks. By establishing this equivalence, the researcher likely clarified the theoretical landscape, suggesting that these constructs are mathematically identical rather than distinct innovations, thereby streamlining the field's foundational understanding.

The significance of this work is evidenced by its substantial citation count of 1,486, indicating widespread recognition and utility within the academic community. Furthermore, the citation analysis reveals that 100% of the classified citing papers originate from independent researchers, underscoring the broad, non-parochial impact of this theoretical clarification across the global research community.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 3 · **1 flagged influential by Semantic Scholar**

CORE PAPER

Vague sets are intuitionistic fuzzy sets

1996 · Fuzzy Sets and Systems · 1,486 citations (GS)

Field-normalised: 978 Semantic Scholar citations place it in the top 1% of Mathematics papers from 1996 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Intuitionistic Fuzzy Aggregation Operators (2007)	Southeast University	China	**Methodology**
2	A review of fuzzy and neutrosophic offsets: Connections to some set concepts and normalization function (2024)	—	—	—
3	A Concise Study of Some Superhypergraph classes (2024)	Independent Researcher, University of New Mexico	Japan, United States	—

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 Intuitionistic Fuzzy Aggregation Operators

"Note 2.1 Gau and Buehrer [30] called the interval a vague value; however, Bustince and Burillo [27] showed that vague sets are equivalent to A-IFSs."

Contribution 2

Claim — Contribution 2

The researcher provided a seminal synthesis of ensemble methods for class imbalance, establishing a foundational framework for bagging, boosting, and hybrid approaches in machine learning.

The researcher's contribution centers on a comprehensive review of ensemble techniques designed to address the class imbalance problem. Published in IEEE Transactions on Systems, Man, and Cybernetics, Part C, this core work systematically examines bagging-, boosting-, and hybrid-based approaches, offering a structured overview of how these methods can be adapted for imbalanced datasets.

This line of work appears to address a critical gap in machine learning literature by consolidating disparate ensemble strategies into a unified analytical framework. By categorizing these approaches, the researcher provided a clear roadmap for practitioners and scholars seeking to mitigate bias in skewed data distributions, a persistent challenge in predictive modeling.

The significance of this contribution is evidenced by its substantial citation count of 3,692, indicating widespread adoption and influence within the field. Furthermore, analysis of citing papers reveals that 100% of the classified citations originate from independent researchers, underscoring the work's broad impact beyond the researcher's immediate academic circle and confirming its status as a widely recognized reference point.

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

CORE PAPER

A Review on Ensembles for the Class Imbalance Problem: Bagging-, Boosting-, and Hybrid-Based Approaches

2011 · IEEE Transactions on Systems, Man, and Cybernetics, Part C (Applications and Reviews) · 3,692 citations (GS)

Field-normalised: 2,390 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	A survey on imbalanced learning: latest research, applications and future directions (2024)	South China University of Technology, The Chinese University of Hong Kong	China	—
2	Cost-sensitive learning for imbalanced medical data: a review (2024)	Mohammed VI Polytechnic University, Mohammed V University	Morocco	—
3	Ensemble learning: A survey (2018)	Ben-Gurion University, Ben-Gurion University of the Negev	Israel	Background
4	A review of ensemble learning and data augmentation models for class imbalanced problems: Combination, implementation and evaluation (2024)	Indian Institute of Technology Guwahati, University of New South Wales	Australia, India	**Methodology**
5	Handling imbalanced medical datasets: review of a decade of research (2024)	Universidad de Córdoba	Spain	—
6	A broad review on class imbalance learning techniques (2023)	Shenzhen University, Toronto Metropolitan University	Canada, China	—
7	A survey on ensemble learning (2019)	City University of Hong Kong, South China University of Technology	China	—
8	Prioritized Experience Replay (2015)	—	—	**Methodology**

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 review of ensemble learning and data augmentation models for class imbalanced problems: Combination, implementation and evaluation

"We computationally evaluated the performance of multiple combinations on known datasets, since a similar evaluation was done more than a decade ago [46]."

METHODOLOGY Prioritized Experience Replay

"In supervised learning, there are numerous techniques to deal with imbalanced datasets when class identities are known, including re-sampling, under-sampling and over-sampling techniques, possibly combined with ensemble methods (for a review, see Galar et al., 2012)."

D. Citing-Institution Prestige & Geography

Top citing institutions

Institution	Country	World ranking	Citing papers
South China University of Technology	China	SCImago #111 · THE 251–300 · QS 377	2
University of Granada	Spain	THE 601–800 · QS =401	2
Indian Institute of Technology Guwahati	India	SCImago #4149 · QS =334	1
City University of Hong Kong	China	SCImago #342 · THE 73 · QS =63	1
Shenzhen University	China	SCImago #229 · THE 351–400 · QS =452	1
Mohammed V University	Morocco	SCImago #4297 · QS 1201-1400	1
Independent Researcher	Japan	—	1
Public University of Navarre	Spain	THE 1201–1500	1
Rochester Institute of Technology	United States	SCImago #2608 · THE 601–800 · QS 951-1000	1
Southeast University	China	THE 251–300 · QS =392	1
The Chinese University of Hong Kong	China	SCImago #163 · THE =41 · QS =32	1
Universidad de Córdoba	Spain	SCImago #2257 · THE 801–1000 · QS 951-1000	1
University of New Mexico	United States	SCImago #1282 · QS 751-760	1
Public University of Navarra	Spain	—	1
Toronto Metropolitan University	Canada	SCImago #2485 · THE 601–800 · QS 711-720	1

Geographic distribution of citing authors

Country	Citing papers
China	4
Spain	3
United States	3
India	1
Australia	1
Japan	1
Morocco	1
Israel	1

Country	Citing papers
Brazil	1
Canada	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	Vague sets are intuitionistic fuzzy sets	3	8 CFR 204.5(i)(3) — Outstanding Researcher
Contribution 2	A Review on Ensembles for the Class Imbalance Problem: Bagging-, Boosting-, and Hybrid-Based Approaches	8	8 CFR 204.5(i)(3) — Outstanding Researcher