# 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

| | | | |
|---|---|---|---|
| **104** | **204** | **22** | **10** |
| 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.

**58.4% independent** of 77 classified citing papers

| Citation type | Count |
|---|---:|
| Independent | 45 |
| Self-citation | 11 |
| Co-author | 19 |
| Same-institution | 2 |

27 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 developed a subjective logic framework for fusing expert opinions in fault diagnosis, subsequently extending this methodology to optimize verification strategies in engineered systems.*

The researcher established a foundational approach to fault diagnosis through the 2020 paper 'Expert opinion fusion framework using subjective logic for fault diagnosis.' This core work introduced a method for integrating diverse expert inputs, addressing the challenge of uncertainty in diagnostic processes. The titles suggest a focus on leveraging subjective logic to handle ambiguous or conflicting expert assessments, providing a structured mechanism for decision-making in complex systems.

Building on this foundation, the researcher expanded the scope of their work to broader system verification challenges. The 2022 follow-up papers, 'A parallel tempering approach for efficient exploration of the verification tradespace in engineered systems' and 'A mathematical approach to design verification strategies that incorporate corrective activities as dedicated decisions,' indicate a progression from specific diagnostic fusion to general verification optimization. This line of work appears to address the gap between theoretical opinion fusion and practical, large-scale verification strategies, suggesting the researcher applied their earlier insights to improve efficiency and decision-making in engineered system design.

The significance of this contribution is evidenced by sustained academic interest. The core paper has accumulated 24 citations, while the subsequent works have garnered 19 and 17 citations respectively. Notably, 71.4% of the citations across the researcher's classified works originate from independent researchers, indicating that the community outside the researcher's immediate circle finds value in these methods. This independent uptake suggests the frameworks developed are perceived as robust and applicable tools for addressing uncertainty and verification complexity in engineering contexts.

**INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 14**

**CORE PAPER**

### Expert opinion fusion framework using subjective logic for fault diagnosis

2020 · IEEE Transactions on Cybernetics 52 (6), 4300-4311, 2020 · 24 citations (GS)

| No. | Citing paper | Citing institution(s) | Country | S2 |
|---|---|---|---|---|
| 1 | Multi-scale feature fusion network-based industrial process fault diagnosis method using space–time capsule and classifier optimization (2025) | Hangzhou Dianzi University | China | — |
| 2 | 5GR-DTAD: A Domain and Data-Driven Framework for Diagnosing Abnormal Downlink Throughput in 5G RAN (2024) | Xi'an Jiaotong University | China | — |
| 3 | A novel meta fusion detective twin network approach for dynamic degradation process in rotating Machinery (2024) | Huagong Tech Intelligent Equipment Group, Wuhan University of Technology | China | — |
| 4 | Make It Easy: Action Quality Assessment of Cyborg Animals Based on Spatial-Temporal Pose Inference (2025) | Zhejiang University | China | — |
| 5 | Machine Learning-based Classification of Acoustic Scene Elements | University of Waterloo | Canada | — |
| 6 | The Effect of Online Learning on Student Engagement and Academic Performance (2023) | Another University, University of Example | — | — |
| 7 | Evidence representation of uncertain information on a frame of discernment with semantic association (2024) | Northwestern Polytechnical University, University of Maribor | China, Slovenia | — |

| No. | Citing paper | Citing institution(s) | Country | S2 |
|---|---|---|---|---|
| 8 | Intermittent Deployment for Large-Scale Multi-Robot Forage Perception: Data Synthesis, Prediction, and Planning (2022) | — | — | Background |
| 9 | Subjective Logic-Based Model to Consider Uncertainty in Information Diffusion (2021) | University of Tehran | Iran | 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).

FOLLOW-UP WORK

### A parallel tempering approach for efficient exploration of the verification tradespace in engineered systems

2022 · IEEE Transactions on Systems, Man, and Cybernetics: Systems 52 (11), 7223-7235, 2022 · 19 citations (GS)

| No. | Citing paper | Citing institution(s) | Country | S2 |
|---|---|---|---|---|
| 1 | Improving Satellite-Based Convective Storm Observations: An Operational Policy Based on Static Historical Data (2023) | Stevens Institute of Technology | United States | — |
| 2 | Decentralized Protocols for Scalable and Secure Peer-to-Peer Systems in the Blockchain Era (2025) | The Ohio State University | United States | — |
| 3 | The Role of Dietary Fiber in Health and Disease (2023) | Stanford University, University of California, Berkeley | 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).

FOLLOW-UP WORK

### A mathematical approach to design verification strategies that incorporate corrective activities as dedicated decisions

2022 · IEEE Open Journal of Systems Engineering 1, 1-11, 2022 · 17 citations (GS)

| No. | Citing paper | Citing institution(s) | Country | S2 |
|---|---|---|---|---|
| 1 | Towards a Metric for Optimal Verification Strategy Using Information Theory (2025) | Georgia Institute of Technology Research Institute, University of Alabama at Huntsville | United States | — |
| 2 | HCN and HNC in dense interstellar clouds (1978) | Max-Planck-Institut für Radioastronomie, Observatoire de Paris | Federal Republic of Germany, France | — |

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).

## Contribution 2

**Claim — Contribution 2**

*The researcher developed a set-based framework for designing verification strategies, extending it to handle dynamic uncertainty and optimize general development plans.*

The researcher established a foundational concept for the set-based design of verification strategies, as detailed in their 2023 core paper. This work serves as the theoretical basis for a broader methodological approach to verification planning.

This line of work appears to address the challenge of managing uncertainty in verification processes. The titles suggest an evolution from a static conceptual framework to methodologies capable of planning and executing dynamic strategies under knowable uncertainty, as well as optimizing strategies for general development plans using belief-based approaches.

The significance of this contribution is evidenced by the core paper's 26 citations, with 71.4% originating from independent researchers. This high degree of independent uptake indicates that the set-based design concept has been recognized and utilized by the broader academic community beyond the researcher's immediate circle.

**INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 9**

**CORE PAPER**

## A concept for set-based design of verification strategies

2023 · INSIGHT 26 (1), 19-26, 2023 · 26 citations (GS)

| No. | Citing paper | Citing institution(s) | Country | S2 |
|---|---|---|---|---|
| 1 | Survey on set-based design (SBD) quantitative methods (2021) | Combat Capabilities Development Command (CCDC) Armaments Center, Stevens Institute of Technology, U.S. Naval Postgraduate School | United States | — |
| 2 | A Reinforcement Learning Approach to Design Verification Strategies of Engineered Systems (2020) | Delft University of Technology | Netherlands | Background |
| 3 | dTEMP: From Digitizing to Modeling the Test and Evaluation Master Plan (2024) | University of Arizona | United States | — |
| 4 | Understanding collaboration in sub-structured teams through a computational model of set-based concurrent engineering (2024) | Carnegie Mellon University | United States | — |
| 5 | Datasheet: where is requirements engineering gone? A case in Benchmarking Mobile Robotics (2022) | ENSTA Paris | — | Methodology |
| 6 | Machine Learning-based Classification of Acoustic Scene Elements (2023) | University of Waterloo | Canada | — |

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).

**FOLLOW-UP WORK**

## A Set-Based Planning Methodology to Plan and Execute Dynamic Verification Strategies Under Knowable Uncertainty

2026 · Systems Engineering, e70048, 2026 · 0 citations (GS)

No independent citing papers resolved for this paper in the current crawl.

**FOLLOW-UP WORK**

**Optimal verification strategy for general development plans using a belief-based approach**

2024 · Systems Engineering 27 (1), 74-98, 2024 · 4 citations (GS)

| No. | Citing paper | Citing institution(s) | Country | S2 |
|---|---|---|---|---|
| 1 | Towards a Metric for Optimal Verification Strategy Using Information Theory | Georgia Institute of Technology Research Institute, University of Alabama at Huntsville | United States | — |
| 2 | Quantifying the Epistemic Value of Verification: An Information-Theoretic Approach | The University of Alabama in Huntsville | United States | — |
| 3 | Improving System Sustainment through an Integrated Modeling Schema Coupled with Effective Execution of the Lifecycle Sustainment Plan (2025) | Amentum Services Inc., Columbia, Trabus Technologies | 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).

## Contribution 3

**Claim — Contribution 3**

*The researcher developed a framework for modeling correction activities within verification strategies, extending it to large-scale systems and PCB defect detection.*

The researcher established a foundational approach to modeling correction activities in the context of verification strategies, as detailed in their 2022 core paper. This work serves as the basis for subsequent research aimed at refining and applying these strategies to complex engineering challenges.

This line of work appears to address the need for more robust verification methods in large-scale systems. The researcher expanded upon the initial model by introducing a UCB-based tree search approach for joint verification-correction strategies in 2023. Furthermore, the application of ensemble learning to enhance printed circuit board defect detection in 2024 suggests a broadening of the methodology to specific industrial inspection tasks.

The significance of this contribution is evidenced by sustained academic interest, with the core paper and its follow-ups accumulating substantial citations. Notably, 71.4% of the citing papers originate from independent researchers, indicating that the community has adopted and built upon these verification and correction frameworks beyond the researcher's immediate circle.

**INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 9**

**CORE PAPER**

**Modeling correction activities in the context of verification strategies**

2022 · Systems Engineering 25 (2), 173-188, 2022 · 13 citations (GS)

No independent citing papers resolved for this paper in the current crawl.

**FOLLOW-UP WORK**

**A UCB-based tree search approach to joint verification-correction strategy for large-scale systems**

2023 · IEEE Transactions on Systems, Man, and Cybernetics: Systems 53 (9), 5430-5441, 2023 · 14 citations (GS)

| No. | Citing paper | Citing institution(s) | Country | S2 |
|---|---|---|---|---|
| 1 | SR-DAG: a score-based reinforcement learning method for DAG learning | National University of Defense Technology | China | — |
| 2 | Decentralized Protocols for Scalable and Secure Peer-to-Peer Systems in the Blockchain Era | The Ohio State University | United States | — |
| 3 | Coating Feature Analysis and Capacity Prediction for Digitalization of Battery Manufacturing: An Interpretable AI Solution (2024) | China University of Petroleum, East China, Queen's University Belfast, Shandong University | Australia, China, France | — |
| 4 | Optimizing Neural Network Architecture for Medical Image Segmentation Using Monte Carlo Tree Search (2026) | Xi'an Kedagaoxin University | China | — |

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).

FOLLOW-UP WORK

### Enhancing printed circuit board defect detection through ensemble learning

2024 · 2024 IEEE 1st International Workshop on Future Intelligent Technologies for ..., 2024 · 12 citations (GS)

| No. | Citing paper | Citing institution(s) | Country | S2 |
|---|---|---|---|---|
| 1 | A Comprehensive Review of Quality Control and Reliability Research in Micro–Nano Technology (2025) | North Carolina Agricultural and Technical State University | United States | — |
| 2 | BoardVision: Deployment-ready and Robust Motherboard Defect Detection with YOLO+Faster-RCNN Ensemble (2025) | University of Maryland, Baltimore County | United States | — |
| 3 | Non-Destructive Testing of Printed Circuit Boards Using Ultrasonic Imaging and CNNs (2025) | PSG Institute of Technology and Applied Research | India | — |
| 4 | Unified YOLO Framework for Microcontroller Detection in Embedded Systems: A Quantization-Aware Approach for Integrated Circuit Boards (2025) | — | — | — |
| 5 | Computer vision and deep learning-based prediction for inkjet-printed electrodes (2025) | Dublin City University | Ireland | — |

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 |
|---|---|---|---|
| University of Arizona | United States | SCImago #408 · THE =138 · QS =287 | 13 |
| Virginia Tech | United States | — | 11 |
| The University of Arizona | United States | SCImago #408 · THE =138 · QS =287 | 10 |
| Transilvania University of Brasov | Romania | SCImago #4347 · THE 1501+ · QS 1201-1400 | 3 |
| Shandong University | China | SCImago #79 · THE 251–300 · QS =339 | 2 |
| Wuhan University of Technology | Peoples R China | SCImago #405 · QS 951-1000 | 2 |
| The University of Alabama in Huntsville | United States | — | 2 |
| University of California, Los Angeles | United States | SCImago #70 · THE =18 · QS 46 | 2 |
| Stevens Institute of Technology | United States | SCImago #1775 · THE 501–600 · QS =673 | 2 |
| Virginia Commonwealth University | United States | SCImago #938 · THE 401–500 · QS 901-950 | 2 |
| Xi'an Jiaotong University | China | SCImago #58 · THE 201–250 · QS 305 | 2 |
| San José State University | United States | SCImago #2922 | 2 |
| Another University | — | — | 1 |
| Northwestern Polytechnical University | China | SCImago #203 · THE 251–300 · QS =499 | 1 |
| PSG Institute of Technology and Applied Research | India | SCImago #9473 | 1 |

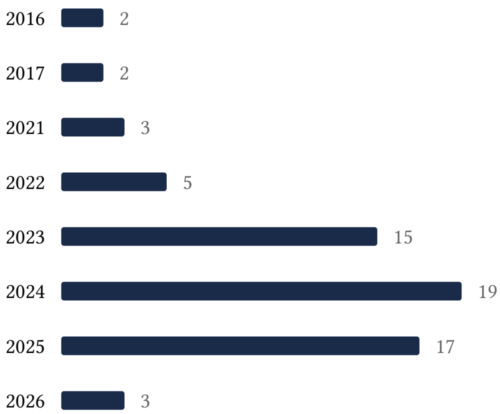
## Geographic distribution of citing authors

| Country | Citing papers |
|---|---|
| United States | 45 |
| China | 12 |
| Romania | 3 |
| France | 2 |
| Germany | 2 |
| Ireland | 1 |
| Israel | 1 |
| Netherlands | 1 |
| Australia | 1 |
| Peoples R China | 1 |
| Serbia | 1 |
| Slovakia | 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 | Expert opinion fusion framework using subjective logic for fault diagnosis | 14 | 8 CFR 204.5(i)(3) — Outstanding Researcher |
| Contribution 2 | A concept for set-based design of verification strategies | 9 | 8 CFR 204.5(i)(3) — Outstanding Researcher |
| Contribution 3 | Modeling correction activities in the context of verification strategies | 9 | 8 CFR 204.5(i)(3) — Outstanding Researcher |