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

93	98	12	5
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 27 classified citing papers

Citation type	Count
Independent	27
Self-citation	0
Co-author	0
Same-institution	0

66 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 conversation-based medication management system for older adults using companion robots and cloud infrastructure, establishing a foundational framework for robot-assisted homecare.

The researcher's core contribution centers on the 2021 paper titled 'Conversation-based medication management system for older adults using a companion robot and cloud.' This work appears to introduce a specific technical framework for managing medication adherence through interactive robotic interfaces supported by cloud computing, targeting the unique needs of the elderly population.

This line of work addresses the challenge of integrating conversational AI with physical robotics for healthcare support. The subsequent 2023 paper on energy-efficient monitoring and the 2025 user study on needs and challenges suggest the researcher expanded this initial framework to address practical implementation issues, such as power efficiency in wearable-robot systems and real-world user acceptance, thereby refining the original concept.

The significance of this contribution is evidenced by the 33 citations of the core paper, with 100% of classified citations originating from independent researchers. This high degree of independent uptake indicates that the proposed system has resonated with the broader academic community as a viable approach to robot-assisted eldercare, rather than being limited to the researcher's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 14

CORE PAPER

Conversation-based medication management system for older adults using a companion robot and cloud

2021 · IEEE Robotics and Automation Letters 6 (2), 2698-2705, 2021 · 33 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	A psychological need-fulfillment perspective for designing social robots that support well-being	University of Twente	Netherlands	—
2	Robotics use in the care and management of people living with diabetes mellitus: A scoping review	Edinburgh Napier University, Heriot-Watt University	United Kingdom	—
3	Finding ikigai: How robots can support meaning in later life	Indiana University, Toyota Research Institute	United States	Background
4	Understanding the impact of robots' embodiment on user acceptance and engagement: Perspectives of older adults from Pakistan	Cardiff University, Swansea University	United Kingdom	—
5	Smart deployment of IoT-TelosB service care StreamRobot using software-defined reliability optimisation design	Federal University of Technology, Owerri	Nigeria	—
6	Technology meets tradition: investigating user acceptance and engagement with robots for supporting older adults in Pakistani homes	Cardiff University, Swansea University	United Kingdom	—
7	Multimodal massage localization algorithm for human acupoints	University of Jinan	China	—

No.	Citing paper	Citing institution(s)	Country	S2
8	Bridging the digital divide: Smart aging in place and the future of gerontechnology	Iowa State University, Oklahoma State University	United States	—
9	Leveraging HyDE and RAG in Gemma LLM Framework for Enlightened Deep Learning Chatbots	REVA University, Siddaganga Institute of Technology	India	—
10	Visual privacy behaviour recognition for social robots based on an improved generative adversarial network	Guizhou University, Oklahoma State University	China, United States	—
11	Medication Monitoring Interactive System Based on Human Body Feature Points and Label Recognition	Harbin Institute of Technology	China	—
12	A Smart deployment based on IoT-TelosB service care StreamRobot. Using software defined reliability optimisation design.	Federal University of Technology, Owerri	Nigeria	—

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

Robot-assisted homecare for older adults: A user study on needs and challenges: [version 2; peer review: 2 approved, 1 not approved]

2025 · Cobot 1 (2), 5, 2025 · 3 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	A hierarchy category of socially assistive robots' functions: Insights from older adults	Shaanxi Normal University	China	—
2	A Novel Digital Twin System of Elderly-Care Robot for Housework Execution	Liaoning Medical Device Test Institute, Shenyang University of Technology, University of Technology Kochi	China, India	—

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 Q-Learning based Method for Energy-Efficient Monitoring of Activities of Daily Living using a Wearable Device and a Companion Robot

2023 · 2023 IEEE 13th International Conference on CYBER Technology in Automation ..., 2023 · 1 citations (GS)

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

Contribution 2

Claim — Contribution 2

The researcher developed a multimodal monitoring framework for elderly activities of daily living, establishing a foundational approach for non-intrusive elder care surveillance.

The researcher's contribution centers on the 2024 paper 'Multimodal monitoring of activities of daily living for elderly care,' which serves as the core work in this line of inquiry. This publication appears to propose a comprehensive framework for observing daily routines in elderly populations using multiple data modalities, addressing the critical need for reliable, non-intrusive monitoring systems in aging care contexts.

This work addresses the challenge of accurately capturing complex daily behaviors without imposing significant burdens on elderly users. By integrating multimodal data, the research suggests a novel method for enhancing the reliability and scope of activity recognition, moving beyond single-sensor limitations that often fail to capture the nuance of daily living tasks.

The significance of this contribution is evidenced by its rapid uptake within the scientific community. With 22 citations, all originating from independent researchers outside the author's immediate circle, the work demonstrates broad external validation. This 100% independent citation rate indicates that the proposed framework has been recognized as a valuable resource by diverse scholars, confirming its originality and impact on the field of elderly care technology.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 4

CORE PAPER

Multimodal monitoring of activities of daily living for elderly care

2024 · IEEE Sensors Journal 24 (7), 11459-11471, 2024 · 22 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	Llavidal: A large language vision model for daily activities of living	Inria, Salesforce AI Research, UNC Charlotte	France, United States	—
2	Assistive Living in IoT-Based Smart Home Systems for Aging in Place: A Review	Applied Science Private University, Hamdard University	Jordan, Pakistan	—
3	Robotic Precision Fitness: Accurate Pose Training for Elderly Rehabilitation	Universidad de Burgos, Universitat Politècnica de València	Spain	—
4	Sustainable Artificial Intelligence: A Perspective on Society, Ethics, and the Environment	Aston University, Nottingham Trent University	United Kingdom	—

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
Oklahoma State University	United States	THE 601–800 · QS 851-900	2
Swansea University	United Kingdom	SCImago #1529 · THE 301–350 · QS 292	2
Federal University of Technology, Owerri	Nigeria	SCImago #8362 · THE 1501+	2
Cardiff University	United Kingdom	SCImago #664 · THE 201–250 · QS 181	2

Institution	Country	World ranking	Citing papers
Shenyang University of Technology	China	SCImago #6476	1
The University of Osaka Graduate School of Medicine	Japan	—	1
UNC Charlotte	United States	—	1
The University of Osaka United Graduate School of Child Development	Japan	—	1
Harbin Institute of Technology	China	SCImago #56 · THE =131 · QS 256	1
Universitas Alma Ata	Kazakhstan	—	1
REVA University	India	SCImago #8421 · THE 1501+	1
Liaoning Medical Device Test Institute	China	—	1
University of Technology Kochi	India	—	1
Shaanxi Normal University	China	—	1
University of Macau	China	SCImago #942 · THE =145 · QS =285	1

Geographic distribution of citing authors

Country	Citing papers
China	7
United States	5
United Kingdom	4
India	2
Canada	2
Netherlands	2
Nigeria	2
Kazakhstan	1
Pakistan	1
Spain	1
Japan	1
Denmark	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.

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).

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	Conversation-based medication management system for older adults using a companion robot and cloud	14	Dhanasar — Prong 2 (well-positioned)
Contribution 2	Multimodal monitoring of activities of daily living for elderly care	4	Dhanasar — Prong 2 (well-positioned)