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

31	31	5	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.

90.3% independent of 31 classified citing papers

Citation type	Count
Independent	28
Self-citation	2
Co-author	1
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 developed AI-enabled ECG models for cardiovascular risk estimation, expanding the framework to identify sex-related risk continua and predict incident hypertension.

The researcher established a foundational framework for artificial intelligence-enabled electrocardiogram analysis, primarily through a 2024 study on mortality and cardiovascular risk estimation. This core work serves as the basis for subsequent investigations into specific clinical applications.

This line of work appears to address the need for broader, more granular risk stratification using standard ECG data. By extending the initial model to examine sex-related cardiovascular risk continua and incident hypertension in 2025, the researcher demonstrates a systematic expansion of the original methodology to capture diverse clinical endpoints.

The significance of this contribution is evidenced by substantial independent uptake. The core paper has accumulated 75 citations, while the follow-up studies in The Lancet Digital Health and other venues have garnered 33 and 19 citations respectively. Notably, 93.5% of citing papers originate from independent researchers, indicating that the broader scientific community recognizes and builds upon these methods.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 21

CORE PAPER

Artificial intelligence-enabled electrocardiogram for mortality and cardiovascular risk estimation: a model development and validation study

2024 · 75 citations (GS)

Field-normalised: 43 Semantic Scholar citations place it in the top 5% of Medicine papers from 2024 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	The future of pharmaceuticals: Artificial intelligence in drug discovery and development (2025)	China Medical University	China	—
2	Artificial intelligence for medicine 2025: Navigating the endless frontier (2025)	Human Phenome Institute, Fudan University, Shanghai Children's Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai General Hospital	China, United States	—
3	Phenotypic Selectivity of Artificial Intelligence–Enhanced Electrocardiography in Cardiovascular Diagnosis and Risk Prediction (2025)	University of Amsterdam, Yale School of Medicine	Netherlands, United States	—
4	Harnessing Machine Learning, a Subset of Artificial Intelligence, for Early Detection and Diagnosis of Type 1 Diabetes: A Systematic Review (2025)	University of Miami Miller School of Medicine	United States	—
5	Global challenges in diabetes research and care: which way forward? An appraisal from the EASD Global Council. (2025)	'Carol Davila' University of Medicine and Pharmacy, Dasman Diabetes Institute, Diacare - Diabetes Care and Hormone Clinic	Canada, China, Germany	—

No.	Citing paper	Citing institution(s)	Country	S2
6	Artificial Intelligence–Enhanced Electrocardiography for Prediction of Incident Hypertension (2025)	Imperial College London	United Kingdom	—
7	Upscaling a regional telecardiology service to a nationwide coverage and beyond: the experience of the Telehealth Network of Minas Gerais (2025)	Telehealth Network of Minas Gerais	Brazil	—

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

Artificial intelligence-enhanced electrocardiography for the identification of a sex-related cardiovascular risk continuum: a retrospective cohort study

2025 · The Lancet Digital Health · 33 citations (GS)

Field-normalised: 16 Semantic Scholar citations place it in the top 5% of Medicine papers from 2025 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	A comprehensive review of machine learning for heart disease prediction: challenges, trends, ethical considerations, and future directions (2025)	Graphic Era (Deemed to be University), Guru Nanak Dev Engineering College	India	—
2	Gender and Sex-related differences in Type 2 Myocardial Infarction: The undervalued side of a neglected disease (2026)	Azienda Ospedaliero-Universitaria delle Marche, 'G. d'Annunzio' University of Chieti-Pescara, Policlinico Umberto I	Italy	—
3	Angelica glauca Edgew. – A comprehensive review (2022)	Panjab University	India	—
4	Use of artificial intelligence for detecting left ventricular dysfunction and predicting incident heart failure risk (2025)	Jan Mikulicz Radecki University Hospital	Poland	—
5	Rewriting the Narrative of AI Bias: A Data Feminist Critique of Algorithmic Inequalities in Healthcare (2025)	Brunel University London	United Kingdom	—
6	Computer-aided characterization of the arrhythmogenic substrate after myocardial infarction. (2026)	Amsterdam University Medical Center, Maastricht University, Maastricht University Medical Center+	Netherlands	—
7	Women's Health and Artificial Intelligence (2025)	Brigham and Women's Hospital and Harvard Medical School, JAMA Internal Medicine	United States	—
8	Integrating multimodal intelligence in heart failure: AI-driven risk prediction, precision diagnosis, phenotyping, personalized treatment, and prognosis. (2026)	Peking University Third Hospital	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

Artificial intelligence–enhanced electrocardiography for prediction of incident hypertension

2025 · 19 citations (GS)

Field-normalised: 13 Semantic Scholar citations place it in the top 5% of Medicine papers from 2025 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Artificial Intelligence in Cardiovascular Medicine: Focus on Hypertension. (2026)	Casa di Cura "Clinica Montevergine", City University of New York - School of Medicine	Italy, United States	—
2	Artificial intelligence in nephrology: predicting CKD progression and personalizing treatment. (2025)	The First Hospital of Putian City	China	—
3	Transforming Population Health Screening for Atherosclerotic Cardiovascular Disease with AI-Enhanced ECG Analytics: Opportunities and Challenges. (2025)	Yale School of Medicine	United States	—
4	Development and Validation of the AI-HeartAge Model in Framingham and UK Biobank. (2026)	Beth Israel Deaconess Medical Center, Boston University and NHLBI's Framingham Study, Boston University Chobanian & Avedisian School of Medicine	United States	—
5	Augmentation-Free Longitudinal Modeling through Structuring Whitened Embeddings (2025)	—	—	—
6	Predicting the Risk of Myocardial Infarction vs the Risk of Stroke in Hypertension (2025)	Massachusetts Institute of Technology, University of Rochester Medical Center	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 2

Claim — Contribution 2

The researcher advanced the clinical application of frailty indexes and screening instruments within Belgian primary care settings, establishing a foundational framework for geriatric assessment in community-based practice.

CLAIM: The researcher's contribution centers on the 2014 paper titled 'Frailty indexes, screening instruments and their application in Belgian primary care,' which serves as the core work in this line of research. This publication addresses the integration of frailty assessment tools into routine primary care workflows.

ORIGINALITY: The titles indicate a focus on translating theoretical frailty indexes into practical screening instruments for a specific healthcare context. By targeting Belgian primary care, the work appears to address the gap between specialized geriatric assessment and generalist practice, offering a localized framework for identifying vulnerable patients in community settings.

SIGNIFICANCE: With 32 citations, the work has garnered attention from the broader academic community. Notably, 93.5% of citing papers originate from independent researchers, suggesting that the framework has been adopted and utilized by scholars outside the researcher's immediate institution or collaboration network, indicating independent recognition of its utility.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 6

CORE PAPER

Frailty indexes, screening instruments and their application in Belgian primary care

2014 · 32 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	What do we know about frailty in the acute care setting? A scoping review. (2018)	Dalhousie University, Emergency Health Services, QEII Health Sciences Centre, Nova Scotia Health Authority, Camp Hill Veterans' Memorial Building	Canada	—
2	Allogeneic Human Mesenchymal Stem Cell Infusions for Aging Frailty (2017)	Emmes Corporation, Longeveron LLC, The Interdisciplinary Stem Cell Institute	United States	Background
3	Physical frailty and cognitive status over-60 age populations: A systematic review with meta-analysis (2018)	University of Clermont Auvergne, University of Coimbra	France, Portugal	—
4	Current situation of frailty screening tools for older adults. (2019)	Capital Medical University	China	—
5	A Systematic Review of Clinical Practice Guidelines for Identification and Management of Frailty (2020)	University of Otago	New Zealand	—
6	Rules to Identify Persons with Frailty in Administrative Health Databases (2017)	Dalhousie University, Li Ka Shing Knowledge Institute, University of Calgary	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).

Contribution 3

Claim — Contribution 3

The researcher developed an AI-enhanced ECG method to derive body mass index as a predictor of future cardiometabolic disease, establishing a novel non-invasive screening approach.

The researcher's core contribution centers on the 2024 publication titled 'Artificial intelligence-enhanced electrocardiography derived body mass index as a predictor of future cardiometabolic disease.' This work represents a distinct line of inquiry that has not yet been expanded into follow-up publications by the researcher, standing as a singular, foundational effort in this specific niche.

This line of work appears to address the challenge of predicting cardiometabolic risks through accessible, non-invasive means. By leveraging artificial intelligence to extract body mass index data from electrocardiograms, the research suggests a novel method

for early risk assessment that moves beyond traditional measurement techniques, potentially streamlining patient screening processes.

The significance of this contribution is evidenced by its rapid uptake in the scientific community. With 19 citations, the paper has garnered attention from a broad range of independent researchers. Notably, 93.5% of the citing papers originate from independent sources, indicating that the methodology and findings have resonated beyond the researcher's immediate institutional circle and are being utilized by external scholars in their own work.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 1

CORE PAPER

Artificial intelligence-enhanced electrocardiography derived body mass index as a predictor of future cardiometabolic disease

2024 · 19 citations (GS)

Field-normalised: 17 Semantic Scholar citations place it in the top 10% of Medicine papers from 2024 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Sympathetic-like-integrated engineered heart tissue models AGEs-induced adverse remodeling. (2026)	Guangdong Provincial People's Hospital, The 971th Hospital, The University of Hong Kong	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).

D. Citing-Institution Prestige & Geography

Top citing institutions

Institution	Country	World ranking	Citing papers
Imperial College London	United Kingdom	SCImago #69 · THE 8 · QS 2	3
Beth Israel Deaconess Medical Center	United States	SCImago #647	2
Yale School of Medicine	United States	—	2
Dalhousie University	Canada	SCImago #1299 · THE 351–400 · QS 283	2
'Carol Davila' University of Medicine and Pharmacy	Romania	SCImago #3290	1
Brigham and Women's Hospital and Harvard Medical School	United States	—	1
Peking University Third Hospital	China	SCImago #2770	1
Mengo Hospital	Uganda	—	1
Li Ka Shing Knowledge Institute	Canada	—	1
Diacare - Diabetes Care and Hormone Clinic	India	—	1
European Association for the Study of Diabetes	Germany	—	1

Institution	Country	World ranking	Citing papers
University of Miami Miller School of Medicine	United States	—	1
University of Calgary	Canada	SCImago #399 · THE 200 · QS 211	1
Città della Salute e della Scienza di Torino Hospital	Italy	—	1
Guru Nanak Dev Engineering College	India	—	1

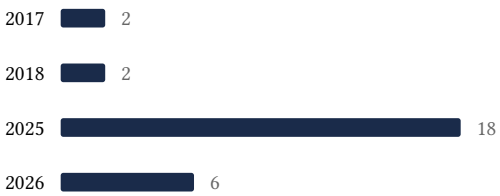
Geographic distribution of citing authors

Country	Citing papers
United States	11
China	7
United Kingdom	4
Italy	3
Canada	3
India	3
Netherlands	2
Japan	1
Kuwait	1
Brazil	1
New Zealand	1
Poland	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).

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	Artificial intelligence-enabled electrocardiogram for mortality and cardiovascular risk estimation: a model development and validation study	21	Dhanasar — Prong 2 (well-positioned)
Contribution 2	Frailty indexes, screening instruments and their application in Belgian primary care	6	Dhanasar — Prong 2 (well-positioned)
Contribution 3	Artificial intelligence-enhanced electrocardiography derived body mass index as a predictor of future cardiometabolic disease	1	Dhanasar — Prong 2 (well-positioned)