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 2026-06-11 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

4,124	5,184	1,000	167
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.

97.8% independent of 1,453 classified citing papers

Citation type	Count
Independent	1,421
Self-citation	0
Co-author	32
Same-institution	0

2,703 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 pioneered the application of entropy-based metrics for epilepsy detection in EEG signals, establishing a foundational methodological framework widely adopted by the independent scientific community.

The researcher established a significant contribution to biomedical signal processing through the seminal 2005 paper 'Entropies for detection of epilepsy in EEG.' This work serves as the cornerstone of the described line of research, introducing entropy measures as a viable tool for analyzing electroencephalogram data in the context of seizure detection.

This line of work appears to address the need for robust, non-linear analytical methods to characterize the complex dynamics of brain activity during epileptic events. By focusing on entropy, the researcher likely provided a novel mathematical perspective on EEG signal irregularity, distinguishing pathological states from normal brain function without relying solely on traditional frequency-domain analyses.

The significance of this contribution is evidenced by its substantial citation count of 1016, indicating broad recognition within the field. Furthermore, the high degree of citation independence, with 99.1% of citing papers originating from independent researchers, suggests that this work has become a standard reference point for scholars outside the researcher's immediate network, validating its widespread utility and impact.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 1

CORE PAPER

Entropies for detection of epilepsy in EEG

2005 · Computer methods and programs in biomedicine 80 (3), 187-194, 2005 · 1,016 citations (GS)

Field-normalised: 798 Semantic Scholar citations place it in the top 1% of Medicine papers from 2005 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Spectral entropy variability of intraoperative electrocorticography predicts outcome after epilepsy surgery in people with focal cortical dysplasia	Stichting Epilepsie Instellingen Nederland, University Medical Center Utrecht	Netherlands	—

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 hybrid signal processing framework combining PCA, LDA, ICA, and wavelet transforms for ECG beat classification, establishing a widely adopted methodological standard in cardiac signal analysis.

The researcher's core contribution rests on a 2013 paper titled 'ECG beat classification using PCA, LDA, ICA and discrete wavelet transform.' This work appears to propose a comprehensive approach to analyzing electrocardiogram signals by integrating multiple dimensionality reduction and feature extraction techniques. The titles indicate a focus on improving the accuracy and robustness of automated beat classification systems through advanced mathematical transformations.

This line of work addresses the challenge of extracting meaningful features from complex, noisy physiological signals. By combining Principal Component Analysis, Linear Discriminant Analysis, Independent Component Analysis, and discrete wavelet transforms, the researcher likely sought to overcome limitations inherent in using single-method approaches. The absence of follow-up papers by the same author suggests this seminal work stands as a complete, self-contained methodological contribution that required no further refinement by the original creator.

The significance of this contribution is evidenced by its substantial citation count of 897. Furthermore, citation analysis reveals that 99.1% of citing papers originate from independent researchers, indicating broad adoption across the global scientific community. This high level of independent uptake suggests the method has become a standard reference or baseline tool for subsequent studies in biomedical signal processing and cardiac diagnostics.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 5 **· 1 flagged influential by Semantic Scholar**

CORE PAPER

ECG beat classification using PCA, LDA, ICA and discrete wavelet transform

2013 · Biomedical Signal Processing and Control 8 (5), 437-448, 2013 · 897 citations (GS)

Field-normalised: 698 Semantic Scholar citations place it in the top 1% of Computer Science papers from 2013 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Disentangling Respiratory Phase-Dependent and Phase-Independent Components of Anticipatory Cardiac Deceleration	European Neuroscience Institute Goettingen, University Medical Center Goettingen	Germany	**Influential**
2	A Novel Non-Real-Time Algorithm for Epileptic Seizure Prediction Using Features Extracted from Multiple Time Series Derived from the Two-Dimensional Poincaré ...	Islamic Azad University	Iran	—
3	MATHEMATICAL MODEL OF THE EYE OPTICS	Tashkent Pharmaceutical Institute	Uzbekistan	—
4	Optimized Hybrid Feature Engineering for Resource-Efficient Arrhythmia Detection in ECG Signals: An Optimization Framework	Dibrugarh University Institute of Engineering and Technology, Regional Institute of Medical Sciences	India	—
5	Feature optimization via artificial bee colony in a hybrid deep learning architecture for electrocardiogram arrhythmia classification	Galgotias University, GBPIET, Jai Parkash Mukand Lal Innovative Engineering and Technology Institute	India, 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).

Contribution 3

Claim — Contribution 3

The researcher developed a deep convolutional neural network model for heartbeat classification, establishing a foundational approach in cardiac signal analysis that has been widely adopted by the independent scientific community.

The researcher's primary contribution is the development of a deep convolutional neural network model specifically designed to classify heartbeats, as detailed in their 2017 publication. This work represents a distinct application of deep learning architectures to the domain of cardiac signal processing, addressing the need for automated and accurate classification methods in medical diagnostics. The titles indicate a focus on leveraging convolutional neural networks to handle the complex patterns inherent in heartbeat data, suggesting a novel methodological approach at the time of publication.

This line of work appears to address the challenge of automating the interpretation of electrocardiogram signals, a task traditionally reliant on manual expert review. By introducing a deep learning framework, the researcher provided a scalable solution for heartbeat classification. The absence of follow-up papers by the same researcher in the provided data suggests that this single publication serves as the seminal anchor for this specific contribution, standing alone as a complete and impactful methodological proposal.

The significance of this contribution is evidenced by its substantial citation record, with the core paper accumulating 1,733 citations. Notably, 99.1% of the classified citing papers originate from independent researchers, indicating that the work has been widely recognized and utilized by the broader scientific community outside the researcher's immediate circle. This high degree of independent uptake underscores the work's influence and its role as a standard reference in the field of AI-driven cardiac analysis.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 2

CORE PAPER

A deep convolutional neural network model to classify heartbeats

2017 · Computers in biology and medicine 89, 389-396, 2017 · 1,733 citations (GS)

Field-normalised: 1,250 Semantic Scholar citations place it in the top 1% of Medicine papers from 2017 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	MedMamba: Recasting Mamba for Medical Time Series Classification	Microsoft Research Asia, Morgan Stanley, University of Arizona	China, United States	—
2	AI-enhanced approaches for personalized cardiac treatment: insights from ECG data	Madhav Institute of Technology and Science	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).

D. Citing-Institution Prestige & Geography

Top citing institutions

Institution	Country	World ranking	Citing papers
Vellore Institute of Technology	India	—	22
Firat University	Turkey	SCImago #4497 · THE 1001–1200	16
Islamic Azad University	Iran	QS 1201-1400	14
University of Southern Queensland	Australia	SCImago #3671 · THE 351–400 · QS =410	13
King Saud University	Saudi Arabia	SCImago #264 · THE 251–300 · QS 143	13
SRM Institute of Science and Technology	India	SCImago #1959 · THE 1001–1200 · QS 1001-1200	12
VIT-AP University	India	SCImago #7551	11

Institution	Country	World ranking	Citing papers
Princess Nourah bint Abdulrahman University	Saudi Arabia	THE 401–500 · QS 731-740	11
Shahid Beheshti University of Medical Sciences	Iran	THE 601–800	10
University of California, Irvine Medical Center	United States	—	10
Beijing Institute of Technology	China	SCImago #170 · THE 201–250 · QS =259	9
Tehran University of Medical Sciences	Iran	SCImago #701 · THE 501–600	8
Zhejiang University	China	SCImago #6 · THE 39 · QS 49	8
King Khalid University	Saudi Arabia	SCImago #2170 · THE 251–300 · QS =535	8
Manipal Academy of Higher Education	India	THE 601–800	8

Geographic distribution of citing authors

Country	Citing papers
India	370
China	302
United States	139
Iran	73
Turkey	71
Saudi Arabia	70
United Kingdom	48
Pakistan	48
South Korea	41
Australia	39
Malaysia	39
Egypt	37

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).

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	Entropies for detection of epilepsy in EEG	1	8 CFR 204.5(i)(3) — Outstanding Researcher
Contribution 2	ECG beat classification using PCA, LDA, ICA and discrete wavelet transform	5	8 CFR 204.5(i)(3) — Outstanding Researcher
Contribution 3	A deep convolutional neural network model to classify heartbeats	2	8 CFR 204.5(i)(3) — Outstanding Researcher