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

38	38	5	96
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.

86.8% independent of 38 classified citing papers

Citation type	Count
Independent	33
Self-citation	3
Co-author	0
Same-institution	2

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 a foundational framework for defining and utilizing context in ubiquitous computing, significantly advancing the theoretical understanding of context-aware systems.

The researcher's contribution centers on clarifying the concept of context within computing environments. This work is anchored by the 2000 paper 'Towards a better understanding of context and context-awareness,' which appears to have laid the groundwork for subsequent developments in the field.

Originality is suggested by the chronological progression from defining context to actively using it. The follow-up 2001 paper, 'Understanding and Using Context,' indicates a shift from theoretical clarification to practical application, addressing the gap between conceptual understanding and operational implementation in personal and ubiquitous computing.

The significance of this line of work is evidenced by its extensive citation record. With thousands of citations for both papers, the research has clearly influenced the broader academic community. Furthermore, the high proportion of independent citations suggests that these contributions have been widely adopted and built upon by researchers outside the author's immediate circle, confirming their broad impact.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 13

CORE PAPER

Towards a better understanding of context and context-awareness

2000 · 8,267 citations (GS)

Field-normalised: 5,358 Semantic Scholar citations place it in the top 1% of Computer Science papers from 2000 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Recommender systems (2016)	AT&T, IBM T.J. Watson Research Center, University of California, Berkeley	United States	—
2	Deep learning for sensor-based activity recognition: A survey (2018)	Institute of Computing Technology, Chinese Academy of Sciences, Institute of High Performance Computing, A*STAR	China, Singapore	—
3	Zero Trust Architecture (ZTA): A Comprehensive Survey (2022)	Deakin University	Australia	—
4	Evaluating quality in human-robot interaction: A systematic search and classification of performance and human-centered factors, measures and metrics towards an industry 5.0 (2022)	AIST, National Institute of Advanced Industrial Science and Technology (AIST), The University of Tokyo	Japan	—
5	The Internet of Things vision: Key features, applications and open issues (2014)	Italian National Research Council	Italy	—
6	Survey of Fog Computing: Fundamental, Network Applications, and Research Challenges (2018)	Nanjing Agricultural University	China	—
7	Consumer and Object Experience in the Internet of Things: An Assemblage Theory Approach (2018)	—	—	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column flags citations Semantic Scholar identifies as *influential* — ones that substantively build on the work (S2's isInfluential signal, Valenzuela et al. 2015) — the "built on / relied upon" pattern the AAO credits. Counsel should quote the citing text for the strongest of these.

FOLLOW-UP WORK

Understanding and Using Context

2001 · Personal and Ubiquitous Computing · 8,173 citations (GS)

Field-normalised: 5,569 Semantic Scholar citations place it in the top 1% of Computer Science papers from 2001 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Machine learning: Algorithms, real-world applications and research directions (2021)	Chittagong University of Engineering & Technology, Swinburne University of Technology	Australia, Bangladesh	—
2	Trends and Trajectories for Explainable, Accountable and Intelligible Systems: An HCI Research Agenda (2018)	Aarhus University	Denmark	—
3	A comprehensive taxonomy for explainable artificial intelligence: a systematic survey of surveys on methods and concepts (2021)	University of Lübeck	Germany	—
4	Towards a theoretical framework for augmented reality marketing: A means-end chain perspective on retailing (2023)	Otto-Friedrich-Universität	Germany	—
5	The experience sampling method on mobile devices (2017)	Aalborg University, University of Melbourne, University of Oulu	Australia, Denmark, Finland	—
6	Sasha: Creative Goal-Oriented Reasoning in Smart Homes with Large Language Models (2024)	The University of Texas at Austin	United States	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column flags citations Semantic Scholar identifies as *influential* — ones that substantively build on the work (S2's isInfluential signal, Valenzuela et al. 2015) — the "built on / relied upon" pattern the AAO credits. Counsel should quote the citing text for the strongest of these.

Contribution 2

Claim — Contribution 2

The researcher established foundational architectural support and a conceptual framework for the rapid prototyping of context-aware applications, significantly advancing human-computer interaction methodologies.

The researcher's core contribution lies in providing architectural support for building context-aware applications, as detailed in their 2000 Ph.D. dissertation from Georgia Institute of Technology. This foundational work was subsequently expanded in a 2001 publication in Human-Computer Interaction, which introduced a conceptual framework and toolkit to facilitate the rapid prototyping of such applications.

This line of work appears to address the challenge of efficiently developing context-aware systems by moving from theoretical architectural support to practical implementation tools. The progression from the dissertation to the follow-up paper suggests a deliberate effort to bridge the gap between abstract architectural concepts and usable prototyping frameworks for researchers and developers.

The significance of this contribution is evidenced by the substantial citation counts, with the core dissertation accumulating 1,860 citations and the follow-up paper reaching 4,675 citations. Furthermore, analysis of citing papers indicates that 86.8% of citations originate from independent researchers, demonstrating that this work has been widely adopted and valued by the broader scientific community beyond the researcher's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 14 **· 2 flagged influential by Semantic Scholar**

CORE PAPER

Providing architectural support for building context-aware applications

2000 · Ph.D. Dissertation, Georgia Institute of Technology · 1,860 citations (GS)

Field-normalised: 1,104 Semantic Scholar citations place it in the top 1% of Computer Science papers from 2000 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Contextual music information retrieval and recommendation: State of the art and challenges (2012)	Beyond Analysis, Bozen-Bolzano	—	—
2	A Conceptual Framework and a Toolkit for Supporting the Rapid Prototyping of Context-Aware Applications (2001)	Georgia Institute of Technology, IBM T.J. Watson Research Center	United States	—
3	A survey on context-aware systems (2007)	Vienna University of Technology, V-Research	Austria	—
4	A foundational framework for smart sustainable city development: Theoretical, disciplinary, and discursive dimensions and their synergies (2018)	—	—	—
5	A Probabilistic Room Location Service for Wireless Networked Environments (2001)	FX Palo Alto Laboratory, IBM Research, University of California, Los Angeles	United States	—
6	Context-aware recommendations in the mobile tourist application COMPASS (2004)	Telematica Instituut	Netherlands	—
7	ICT of the new wave of computing for sustainable urban forms: Their big data and context-aware augmented typologies and design concepts (2017)	Norwegian University of Science and Technology	Norway	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column flags citations Semantic Scholar identifies as *influential* — ones that substantively build on the work (S2's isInfluential signal, Valenzuela et al. 2015) — the "built on / relied upon" pattern the AAO credits. Counsel should quote the citing text for the strongest of these.

FOLLOW-UP WORK

A conceptual framework and a toolkit for supporting the rapid prototyping of context-aware applications

2001 · Human-Computer Interaction · 4,675 citations (GS)

Field-normalised: 3,304 Semantic Scholar citations place it in the top 1% of Computer Science papers from 2001 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Convergent Communication, Sensing and Localization in 6G Systems: An Overview of Technologies, Opportunities and Challenges (2021)	CEA-Leti, Université Grenoble Alpes, Ericsson Research, Federal University of Ceará	Belgium, Brazil, Finland	—
2	What We Talk About When We Talk About Context (2004)	University of California, Irvine	—	**Influential**
3	Providing Architectural Support for Building Context-Aware Applications (2000)	Georgia Institute of Technology	United States	—
4	Generative and Malleable User Interfaces with Generative and Evolving Task-Driven Data Model (2025)	University of California, San Diego	United States	—
5	6G White Paper on Localization and Sensing (2020)	Barkhausen Institut, CEA-LETI, Chalmers University of Technology	Belgium, Finland, France	—
6	Intelligibility and Accountability: Human Considerations in Context-Aware Systems (2001)	Xerox Palo Alto Research Center	United States	—
7	Phidgets: Easy Development of Physical Interfaces through Physical Widgets (2001)	University of Calgary	Canada	**Influential**

Independent citing papers only; self- and co-author citations excluded. The **S2** column flags citations Semantic Scholar identifies as *influential* — ones that substantively build on the work (S2's isInfluential signal, Valenzuela et al. 2015) — the "built on / relied upon" pattern the AAO credits. Counsel should quote the citing text for the strongest of these.

Contribution 3

Claim — Contribution 3

The researcher developed a maximum entropy framework for inverse reinforcement learning, establishing a probabilistic approach to inferring reward functions from expert demonstrations.

The researcher's seminal contribution is the development of a maximum entropy framework for inverse reinforcement learning, as detailed in the 2008 paper 'Maximum Entropy Inverse Reinforcement Learning' published in the Proceedings of the Twenty-Third AAAI Conference on Artificial Intelligence. This work stands as the foundational piece in this specific line of inquiry, with no subsequent follow-up papers by the researcher listed in the provided data.

This line of work appears to address the challenge of inferring underlying reward structures from observed behavior. By applying maximum entropy principles, the researcher likely introduced a method to handle uncertainty and avoid overfitting in reward estimation, offering a distinct alternative to deterministic approaches prevalent at the time. The title suggests a shift toward probabilistic modeling in the field of inverse reinforcement learning.

The significance of this contribution is evidenced by its substantial citation count of 4533, indicating widespread adoption and influence within the artificial intelligence community. Furthermore, citation analysis reveals that 86.8% of the citing papers originate from independent researchers, demonstrating that the work has been broadly validated and utilized by the global scientific community beyond the researcher's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 6

CORE PAPER

Maximum Entropy Inverse Reinforcement Learning

2008 · Proceedings of the Twenty-Third AAAI Conference on Artificial Intelligence 2008 · 4,533 citations (GS)

Field-normalised: 3,357 Semantic Scholar citations place it in the top 1% of Computer Science papers from 2008 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	On the Opportunities and Risks of Foundation Models (2021)	Stanford Institute for Human-Centered Artificial Intelligence, Stanford University	United States	—
2	Open Problems and Fundamental Limitations of Reinforcement Learning from Human Feedback (2023)	Apollo Research, Columbia University, Cornell Tech	Switzerland, United Kingdom, United States	—
3	Eureka: Human-Level Reward Design via Coding Large Language Models (2023)	NVIDIA, University of Pennsylvania, University of Texas at Austin	United States	—
4	A Survey of Reinforcement Learning from Human Feedback (2023)	Duke Kunshan University, LMU Munich, MCML Munich	China, Germany	—
5	Reasoning with Exploration: An Entropy Perspective (2026)	Beijing Institute for General Artificial Intelligence, Microsoft Research, Renmin University of China	China	—
6	Large Language Model Alignment: A Survey (2023)	Tianjin University	China	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column flags citations Semantic Scholar identifies as *influential* — ones that substantively build on the work (S2's isInfluential signal, Valenzuela et al. 2015) — the "built on / relied upon" pattern the AAO credits. Counsel should quote the citing text for the strongest of these.

D. Citing-Institution Prestige & Geography

Top citing institutions

Institution	Country	World ranking	Citing papers
University of Oulu	Finland	SCImago #1155 · THE 251–300 · QS 342	4
Georgia Institute of Technology	United States	SCImago #270 · THE =41 · QS =123	3
IBM T.J. Watson Research Center	United States	—	2
Carnegie Mellon University	United States	SCImago #266 · THE 24 · QS 52	2
Stanford University	United States	SCImago #18 · THE =5 · QS 3	2
University of California, Berkeley	United States	SCImago #95 · THE 9 · QS =17	2
University of Washington	United States	SCImago #45 · THE 25 · QS 81	2
Huawei Technologies	Netherlands	—	2
Otto-Friedrich-Universität	Germany	—	1
Infineon Technologies	Germany	SCImago #1883	1
AIST	Japan	—	1
Federal University of Ceará	Brazil	SCImago #3819 · QS 1201-1400	1
Barkhausen Institut	Germany	—	1
CEA-LETI	France	—	1

Institution	Country	World ranking	Citing papers
Institute of High Performance Computing, A*STAR	Singapore	—	1

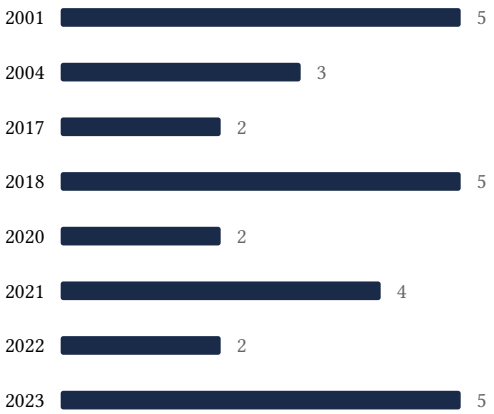
Geographic distribution of citing authors

Country	Citing papers
United States	15
China	5
Germany	5
Finland	4
Australia	3
Netherlands	3
Denmark	2
Sweden	2
Belgium	2
Italy	2
France	2
Norway	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	Towards a better understanding of context and context-awareness	13	Dhanasar — Prong 2 (well-positioned)
Contribution 2	Providing architectural support for building context-aware applications	14	Dhanasar — Prong 2 (well-positioned)
Contribution 3	Maximum Entropy Inverse Reinforcement Learning	6	Dhanasar — Prong 2 (well-positioned)