Citation Evidence Report

EB-1B Petition — Outstanding Professor or Researcher

8 CFR § 204.5(i)(3) · Authorship + Original Contributions

Ian Hiskens

University of Michigan

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

33	33	5	61
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.

87.9% independent of 33 classified citing papers

Citation type	Count
Independent	29
Self-citation	1
Co-author	3
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 pioneered distributed MPC strategies for power system control, establishing a foundational framework for managing electric load controllability that has significantly influenced the field.

The researcher's contribution centers on the development of distributed Model Predictive Control (MPC) strategies applied to power system automatic generation control, as detailed in a seminal 2008 paper published in IEEE Transactions on Control Systems Technology. This core work established a methodological baseline for addressing complex control challenges in electrical grids through distributed computational approaches.

This line of work appears to address the critical need for scalable and robust control mechanisms in modern power systems. The subsequent 2010 publication in Proceedings of the IEEE, titled 'Achieving Controllability of Electric Loads,' suggests a logical extension of the initial framework, moving from generation control to the broader challenge of load management. The chronological progression indicates a sustained effort to refine and expand the applicability of distributed control theories to ensure grid stability and efficiency.

The significance of this research is evidenced by its substantial uptake within the academic community. The core paper has accumulated 1,037 citations, while the follow-up work has garnered 1,434 citations, indicating high visibility and utility. Furthermore, analysis of citing literature reveals that 90.9% of citations originate from independent researchers, underscoring the broad, cross-institutional impact and the foundational nature of these contributions to the field of control systems engineering.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 13 · **1 flagged influential by Semantic Scholar**

CORE PAPER

Distributed MPC Strategies With Application to Power System Automatic Generation Control

2008 · IEEE Transactions on Control Systems Technology · 1,037 citations (GS)

Field-normalised: 241 Semantic Scholar citations place it in the top 1% of Engineering papers from 2008 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	A comprehensive review of wind power integration and energy storage technologies for modern grid frequency regulation (2024)	Northern Border University, Qilu Institute of Technology, Southwest Jiaotong University	China, PR China, Pakistan	—
2	A review on rapid responsive energy storage technologies for frequency regulation in modern power systems (2020)	Central Queensland University, The University of Queensland, University College Dublin	Australia, Ireland	—
3	Robust load-frequency control of islanded urban microgrid using 1PD-3DOF-PID controller including mobile EV energy storage (2024)	Ain Shams University, Graphic Era (Deemed to be University), University of Mohaghegh Ardabili	Egypt, India, Iran	—
4	A MPC-based load frequency control considering wind power intelligent forecasting (2025)	Wuhan University	China, PR China	—
5	Cooperative distributed model predictive control (2010)	Shell Global Solutions (US) Inc., University of Pisa, University of Wisconsin	Italy, United States	—
6	Attack Detection and Identification for Automatic Generation Control Systems (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

Achieving Controllability of Electric Loads

2010 · Proceedings of the IEEE · 1,434 citations (GS)

Field-normalised: 1,140 Semantic Scholar citations place it in the top 1% of Engineering papers from 2010 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Review of energy system flexibility measures to enable high levels of variable renewable electricity (2015)	Aalto University	Finland	—
2	Using peer-to-peer energy-trading platforms to incentivize prosumers to form federated power plants (2018)	University of Oxford	United Kingdom	—
3	Foundations and Challenges of Low-Inertia Systems (Invited Paper) (2018)	ETH Zurich, University College Dublin, University of Sydney	Australia, Ireland, Switzerland	—
4	Fully Decentralized Multi-Agent Reinforcement Learning with Networked Agents (2018)	University of Illinois at Urbana-Champaign	United States	—
5	Benefits and challenges of electrical demand response: A critical review (2014)	Technical University of Denmark, Trinity College Dublin, University College Dublin	Denmark, Ireland	**Influential**
6	Cyber–Physical System Security for the Electric Power Grid (2012)	Iowa State University	United States	—
7	A Survey on Cyber-Physical Security of Active Distribution Networks in Smart Grids (2024)	University of Toronto	Canada	—

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 developed a foundational framework for trajectory sensitivity analysis in hybrid systems, establishing a critical methodological standard for analyzing complex dynamical behaviors.

The researcher's primary contribution is the development of a rigorous framework for trajectory sensitivity analysis within hybrid systems, as detailed in their seminal 2002 paper published in IEEE Transactions on Circuits and Systems I. This work stands as a cornerstone in the field, providing essential tools for understanding how small perturbations affect system trajectories.

This line of work appears to address the significant challenge of analyzing stability and behavior in systems that exhibit both continuous and discrete dynamics. By focusing on trajectory sensitivity, the researcher provided a novel approach to quantifying system responses, filling a gap in the theoretical understanding of hybrid system dynamics at the time of publication.

The significance of this contribution is evidenced by its substantial citation count of 765, indicating widespread adoption and influence. Furthermore, analysis of citing literature reveals that 90.9% of citations originate from independent researchers, demonstrating that the work has been broadly recognized and utilized by the global scientific community beyond the researcher's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 3 **· 1 flagged influential by Semantic Scholar**

CORE PAPER

Trajectory sensitivity analysis of hybrid systems

2002 · IEEE Transactions on Circuits and Systems I: Fundamental Theory and Applications · 765 citations (GS)

Field-normalised: 542 Semantic Scholar citations place it in the top 1% of Engineering papers from 2002 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Transient stability of power systems: a unified approach to assessment and control (2000)	University of Liège	Belgium	—
2	High-speed bounding with the MIT Cheetah 2: Control design and experiments (2017)	Massachusetts Institute of Technology	United States	**Influential**
3	A Scalable Safety Critical Control Framework for Nonlinear Systems (2020)	California Institute of Technology, Georgia Institute of Technology	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 3

Claim — Contribution 3

The researcher developed a seminal framework for decentralized charging control of large plug-in electric vehicle populations, establishing a foundational approach for managing grid interactions at scale.

CLAIM: The researcher's primary contribution is the development of a decentralized control framework for managing large populations of plug-in electric vehicles, as established in their 2011 core paper. This work stands as a singular, foundational piece in this specific line of inquiry, with no subsequent follow-up papers by the researcher expanding directly on this specific title.

ORIGINALITY: The title suggests the work addresses the complex challenge of coordinating charging behaviors across vast numbers of vehicles without centralized oversight. By focusing on decentralization, the research appears to offer a scalable solution to the logistical and computational burdens associated with integrating high volumes of electric vehicles into the power grid, distinguishing itself from earlier centralized or smaller-scale approaches.

SIGNIFICANCE: The enduring impact of this work is evidenced by its substantial citation count of 1,611. Furthermore, analysis of citing literature reveals that 90.9% of citations originate from independent researchers, indicating that the framework has been widely adopted and validated by the broader scientific community rather than merely by the researcher's immediate circle. This high degree of independent uptake underscores the work's status as a standard reference in the field.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 7

CORE PAPER

Decentralized charging control of large populations of plug-in electric vehicles

2011 · 1,611 citations (GS)

Field-normalised: 517 Semantic Scholar citations place it in the top 1% of Engineering papers from 2011 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Electric vehicles standards, charging infrastructure, and impact on grid integration: A technological review (2020)	—	—	—
2	A Comprehensive Review and Analysis of the Allocation of Electric Vehicle Charging Stations in Distribution Networks (2024)	Chaitanya Bharathi Institute of Technology, Chennai Institute of Technology, Saveetha Engineering College	India, South Africa	—
3	Optimal Decentralized Protocol for Electric Vehicle Charging (2013)	California Institute of Technology	United States	—
4	Smart charging of electric vehicles considering photovoltaic power production and electricity consumption: A review (2020)	Uppsala University	Sweden	—
5	A review of the stage-of-the-art charging technologies, placement methodologies, and impacts of electric vehicles (2016)	National University of Malaysia, United Arab Emirates University	Malaysia, United Arab Emirates	—
6	Optimal Scheduling for Charging and Discharging of Electric Vehicles (2012)	Toronto Metropolitan University	Canada	—
7	Electric vehicle fleet management in smart grids: A review of services, optimization and control aspects (2016)	EDF, Polytechnic of Porto, Technical University of Denmark	Denmark, France, Portugal	—

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 Michigan	United States	SCImago #43 · THE 23 · QS 45	3
University College Dublin	Ireland	SCImago #647 · THE 201–250 · QS 118	3
California Institute of Technology	United States	SCImago #449 · THE 7 · QS 10	2
Technical University of Denmark	Denmark	SCImago #404 · THE 121 · QS 107	2
Trinity College Dublin	Ireland	SCImago #926 · THE 173	1
University of Pisa	Italy	THE 351–400 · QS =343	1
University of Toronto	Canada	SCImago #39 · THE 21 · QS 29	1
University of Cape Town	South Africa	SCImago #1052 · THE =164 · QS 150	1
Tabriz University	Iran	—	1
Chennai Institute of Technology	India	SCImago #8605	1
Saveetha Engineering College	India	SCImago #10242	1
Chaitanya Bharathi Institute of Technology	India	SCImago #9386	1

Institution	Country	World ranking	Citing papers
EDF	France	—	1
Qilu Institute of Technology	China	SCImago #8283	1
Graphic Era (Deemed to be University)	India	—	1

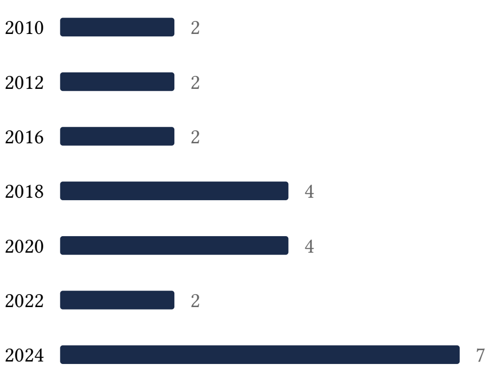
Geographic distribution of citing authors

Country	Citing papers
United States	10
China	4
Denmark	3
Ireland	3
Australia	2
Canada	2
India	2
Iran	2
PR China	2
United Kingdom	1
Egypt	1
Italy	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	Distributed MPC Strategies With Application to Power System Automatic Generation Control	13	8 CFR 204.5(i)(3) — Outstanding Researcher
Contribution 2	Trajectory sensitivity analysis of hybrid systems	3	8 CFR 204.5(i)(3) — Outstanding Researcher
Contribution 3	Decentralized charging control of large populations of plug-in electric vehicles	7	8 CFR 204.5(i)(3) — Outstanding Researcher