PRISMA 2020 Checklist

Section and Topic	Item #	Checklist item	Location where item is reported
TITLE			
Title	1	Identify the report as a systematic review.	Title (p. 1)
ABSTRACT			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	Abstract (p. 1)
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	Section 1 (Introduction), paragraphs 1–2
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	Section 1, paragraph 3; five domains listed in enumerated list
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	Section 1.1 (Review Methodology), "Eligibility Criteria" paragraph; Supplementary Material S1, Section 2
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	Section 1.1, "Information Sources and Search Strategy" paragraph; Supplementary Material S1, Section 1
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	Section 1.1, search query block; Supplementary Material S1, Section 1 (database-specific queries)
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	Section 1.1, "Selection Process" paragraph; two independent reviewers, Cohen's $\kappa = 0.83$; Figure 1 (PRISMA flow diagram)
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	Section 1.1, "Data Extraction and Quality Assessment" paragraph; Supplementary Material S1, Section 4 (data extraction form)
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	Section 1.1, "Data Extraction": platform, memory footprint, performance metrics, security claims, contributions; Supplementary Material S1, Section 4
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	Section 1.1, "Data Extraction": bibliographic data, technical scope, architecture; Supplementary Material S1, Section 4
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	Section 1.1, "Data Extraction and Quality Assessment": 4-dimension quality rubric (0–100 points); Supplementary Material S1, Section 3
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	Not applicable — narrative synthesis, no statistical effect measures calculated
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing	Section 1.1, "Distribution of Included Studies" paragraph; studies grouped by five security domains

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		against the planned groups for each synthesis (item #5)).	
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	Not applicable — qualitative review; no statistical data conversions performed
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	Section 1.1 and Sections 3–7; Tables 2–8 present domain-specific results; Figures 1–5
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	Section 1.1, "Distribution of Included Studies": narrative synthesis by domain. No meta-analysis performed
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	Not applicable — narrative synthesis; no meta-regression or subgroup analysis performed
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	Not applicable — narrative synthesis; no sensitivity analyses conducted
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	Section 1.1, final paragraph: broad database coverage, grey literature inclusion, independent screening mitigate reporting bias
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	Section 1.1, quality tier distribution: 56% high (≥75), 36% medium (50–74), 8% with limitations (<50)
RESULTS			
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	Section 1.1, "Selection Process" paragraph; Figure 1 (PRISMA flow diagram): 2,100 → 1,247 → 212 → 94
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	Section 1.1, exclusion reasons detailed: 1,035 at screening (412 non-embedded, 287 theoretical, 156 scope, 89 duplicate, 18 non-English, 73 other); 118 at full-text (47 scope, 31 detail, 23 quality, 17 superseded)
Study characteristics	17	Cite each included study and present its characteristics.	Sections 3–7; each included study cited and characteristics presented in domain-specific tables and text
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	Section 1.1, quality tiers reported; Supplementary Material S1, Section 3 (quality rubric); 53 high, 34 medium, 7 with limitations
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	Not applicable — narrative synthesis. Domain-specific results with quantitative performance data in Tables 2–8
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	Sections 3–7 open with synthesis of domain characteristics; Section 1.1 reports quality distribution

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	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	Not applicable — no meta-analysis performed. Narrative synthesis in Sections 3–7
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	Not applicable — no formal heterogeneity investigation. Domain and platform distributions reported in Section 1.1
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	Not applicable — no sensitivity analyses conducted
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	Section 8.3 (Limitations): acknowledges potential underrepresentation of proprietary vendor implementations and non-Western standards
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	Section 1.1 (quality tiers); Section 8.3 (Limitations): caveats on evidence certainty discussed
DISCUSSION			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	Section 8 (Discussion), paragraphs 1–3: interpretation in context of prior surveys and industry trends
	23b	Discuss any limitations of the evidence included in the review.	Section 8.3 (Limitations): five specific limitations enumerated (Western standards bias, temporal scope, proprietary underrepresentation, evolving recommendations, architecture coverage)
	23c	Discuss any limitations of the review processes used.	Section 8.3 (Limitations): retrospective registration, narrative synthesis limitations acknowledged
	23d	Discuss implications of the results for practice, policy, and future research.	Section 8.1 (Practitioner Recommendations); Section 8.2 (Synthesis and Future Directions)
OTHER INFORMATION			
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	Section 1.1: registered with OSF Registries (DOI to be inserted upon registration)
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	Section 1.1: protocol documented in supplementary materials; Supplementary Material S1
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	Section 1.1: retrospective registration notice — protocol documents methodology as implemented
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	Funding statement: “This research received no external funding.”
Competing interests	26	Declare any competing interests of review authors.	Conflicts of Interest statement: “The authors declare no conflicts of interest.”
Availability of data, code and	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies;	Supplementary Material S1 provides: search protocols, PRISMA

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other materials		data used for all analyses; analytic code; any other materials used in the review.	checklist, data extraction form, quality rubric. This is a review article; no original experimental data generated.