# AI-slands

## Towards an Island-Centred Approach to Artificial Intelligence

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**AI-slands Working Paper No. 1 | 2026**

AI-slands research initiative: https://ai-slands.neohjalt.chatgpt.site/

*Suggested citation: Jennings, A. (2026) AI-slands: Towards an Island-Centred Approach to Artificial Intelligence. AI-slands Working Paper No. 1. Institute for Northern Studies, University of the Highlands and Islands.*

## Abstract

Artificial intelligence is frequently discussed as though it were a placeless technology whose effects will spread relatively evenly through increasingly connected societies. An Island Studies perspective calls this assumption into question. AI is produced through concentrated infrastructures of capital, computing power, energy, data and specialist expertise, while its applications enter communities characterised by very different geographical, demographic, cultural and political circumstances. This paper proposes AI-slands as an island-centred framework for examining a central tension: artificial intelligence may compress some consequences of geographical distance while simultaneously increasing dependence on distant infrastructures, platforms and representational systems. The paper organises its contribution as an analytical sequence. AI archipelagos provides the spatial frame; algorithmic mainlanding names a mechanism by which metropolitan or mainland conditions become algorithmic defaults; digital double insularity and synthetic islandness describe resulting forms of representational distance and machine-produced island imagery; and insular AI sovereignty identifies a practical governance response centred on island agency rather than technological self-sufficiency. The argument is conceptual and propositional. It is intended to generate hypotheses for comparative island research, particularly through a proposed Island Representation Audit and studies of AI in island services, culture, language, governance and infrastructure.

## 1. Why think about artificial intelligence from islands?

What changes when artificial intelligence is viewed from islands rather than from the metropolitan centres where most digital futures are imagined?

This is the question at the heart of AI-slands. Much discussion of artificial intelligence begins with corporations, research laboratories, universities, governments and large urban economies. It focuses on the capabilities of models, their effects upon employment and productivity, questions of safety and regulation, or their potential transformation of education, healthcare, business and public administration. These are important discussions. Yet they often contain an implicit geography. AI is not placeless: its infrastructures, labour, data and political power are materially concentrated, even when its interfaces appear frictionless and ubiquitous (Crawford, 2021; Rella, 2026).

The environments most readily imagined in AI futures are generally well connected. They possess large institutions, substantial technical capacity, specialist labour markets and comparatively easy access to services. Digital infrastructure is assumed to be present. Large datasets are available. Institutions have sufficient capacity to experiment with new technologies and, at least theoretically, to exercise some choice about their adoption.

Island communities complicate these assumptions. Many experience distance from major centres of administration, professional services, higher education and specialist employment.

Transport networks may be vulnerable to weather and cost. Populations can be small and dispersed. Public institutions may operate at scales at which the loss of a handful of skilled individuals matters considerably. Languages, dialects, place-names and cultural knowledge may be poorly represented in national or international datasets. Decisions about infrastructure, services and investment are frequently made elsewhere.

Island Studies has long insisted that islands should be studied on their own terms rather than treated simply as smaller or deficient versions of continental places (Baldacchino, 2006; Hay, 2006). Relational and archipelagic approaches have subsequently stressed that islands are constituted through connections as well as boundaries, and that island-mainland relations are frequently relations of power, dependence, mobility and exchange (Stratford et al., 2011; Pugh, 2018). This perspective is especially useful for thinking about artificial intelligence.

At first sight, AI appears capable of reducing some island disadvantages. It could widen access to specialist knowledge, support small organisations, assist language work, enhance environmental monitoring or improve access to archives. These possibilities should presently be treated as research propositions rather than assumed outcomes. The opposite possibility must also be taken seriously. Technologies that reduce distance can increase dependency when the systems, data, infrastructure and expertise on which they rely are controlled elsewhere. Connection may bring convenience while simultaneously expanding the extraction and appropriation of data by distant platforms (Couldry and Mejias, 2019).

The paper's central argument is therefore a capacity-dependency tension: AI can increase what an island institution or community is able to do while at the same time increasing the number of external infrastructures and organisations on which that capacity depends. The relevant question is not whether islands should embrace or reject artificial intelligence. It is under what conditions AI strengthens island agency, and under what conditions it transfers knowledge, capacity and authority away from islands.

## 2. Positioning AI-slands within an emerging field

Islands are not entirely absent from contemporary AI research. An emerging literature on Small Island Developing States addresses AI readiness, climate resilience, public-sector modernisation and ethical governance. UNESCO's 2024 needs assessment, for example, documents substantial gaps in data readiness and governance across SIDS, while Addison (2026) develops a context-sensitive framework for ethical AI in climate resilience. International organisations have also begun to promote AI capacity building for SIDS.

That literature is important, but AI-slands asks a somewhat different question. First, its geographical scope is not limited to SIDS: Northern and Arctic islands, autonomous jurisdictions, subnational archipelagos and Indigenous island territories present different combinations of remoteness, constitutional status, infrastructure and cultural authority. Secondly, AI-slands begins from Island Studies rather than from development policy or

technological readiness. Its concern is not only whether islands can obtain AI capacity, but how AI reconfigures island-mainland relations, local agency, representation and dependence.

This distinction also guards against essentialising islands. 'Island' is not a single political or social condition. Shetland, Greenland, the Faroe Islands, Tuvalu, Åland and Prince Edward Island differ profoundly in sovereignty, Indigenous rights, language, demography, infrastructure and state relations. The value of an island-centred framework lies precisely in enabling comparison across such differences rather than assuming that islandness produces uniform outcomes.

## 3. AI archipelagos: the spatial frame

Artificial intelligence is often encountered through apparently immaterial interfaces. A question is entered into a browser or application and an answer appears almost instantaneously. This can create the impression of a technology detached from geography.

In reality, AI is intensely material and spatial. Large-scale systems depend upon data centres, electricity generation, cooling and water, communications cables, cloud platforms, semiconductor supply chains, specialist technical labour, large collections of data, considerable financial capital and proprietary systems. Crawford (2021) describes AI as an extractive material system rather than merely a collection of algorithms. Recent work in critical AI geography likewise argues that the material location and spatial distribution of computation shape AI itself (Rella, 2026).

AI archipelagos is best understood not as a stand-alone theory but as the paper's spatial framing. The most powerful centres within the AI economy can be imagined as highly connected nodes of computing capacity, expertise and capital. They communicate intensively with one another while many geographically peripheral communities participate principally as users of systems developed elsewhere. The metaphor borrows deliberately from archipelagic thinking in Island Studies, where attention shifts from isolated territorial units to networks, relations and cross-currents (Stratford et al., 2011).

A geographically remote island may therefore be digitally connected to a global system yet possess very little control over its architecture. Access and control are different things. A community may enjoy fast broadband and widespread use of generative AI while remaining dependent upon distant companies for models, cloud infrastructure, training data and the rules governing their use. This resembles what recent political theory describes as infrastructural or techno-sovereignty: authority can be exercised through control of the systems and chokepoints on which others depend (Ishkhanyan, 2026).

The archipelagic frame therefore directs attention away from a simple connected/disconnected binary and towards the quality of connection: connection on whose terms, through whose infrastructure, with what capacity for refusal, adaptation or redress?

## 4. Algorithmic mainlanding: the mechanism

The most distinctively island-centred concept proposed here is algorithmic mainlanding.

Digital colonialism, algorithmic colonialism and epistemic injustice already describe ways in which computational systems reproduce dominant power structures, classifications and forms of knowledge (Couldry and Mejias, 2019; Bender et al., 2021; Ishkhanyan, 2026). Algorithmic mainlanding is intended as a narrower term within that larger field. It names the specifically island-related process through which mainland or metropolitan circumstances become the unmarked norm against which island conditions are interpreted as exceptional, deficient or statistically inconvenient.

This need not result from deliberate prejudice. It can emerge because dominant populations generate more data, because national datasets aggregate small island populations, or because system designers assume infrastructural conditions that are common in large urban or mainland settings. Research on natural-language processing, for example, shows sharp inequalities in the representation of the world's languages in contemporary language technologies (Joshi et al., 2020).

Possible manifestations of algorithmic mainlanding are hypotheses for empirical testing. A transport model might underweight ferry dependency or weather disruption; an administrative model might treat small samples as statistically negligible; a service model might assume proximity to facilities that island residents must reach by air or sea; a language model might reproduce externally generated descriptions because locally produced material is sparse or difficult to access.

The resulting problem is not simply factual error. Islanders can become digitally visible while remaining conceptually peripheral. AI may produce fluent descriptions of an island while drawing disproportionately upon tourism writing, national media, generic reference sources and repeated external stereotypes. Algorithmic mainlanding therefore turns an established Island Studies question into an AI research question: when a machine describes an island, whose island is being described?

## 5. Digital double insularity and synthetic islandness

Two related effects follow from this mechanism.

Digital double insularity describes the simultaneous presence of geographical distance and representational distance. The first is familiar: separation from administrative centres, specialist institutions, markets or services. The second is epistemic: distance from the datasets, categories and assumptions through which digital systems understand society. Technical connectivity may reduce the first without resolving the second. An island can possess excellent

broadband and still be poorly represented within the systems to which that broadband provides access.

The term does not replace the established literature on digital divides. Its purpose is to draw attention to a specifically two-layered condition in which connectivity can coexist with misrecognition. The question is therefore not simply whether islanders can use artificial intelligence, but whether island realities are adequately represented within it, whether institutions can influence its application, and whether communities possess the knowledge and procedures necessary to challenge systems when they get things wrong.

Generative AI adds a second effect: synthetic islandness. AI systems now create tourism descriptions, historical accounts, teaching material, imagery and cultural interpretation at enormous scale. Islands have long been burdened by externally generated metaphors of paradise, isolation, backwardness, resilience or timelessness (Hay, 2006). Generative systems can reproduce and multiply these imaginaries.

Synthetic islandness refers specifically to this recursive machine production of 'the island' as a digital object. Its distinctiveness becomes clearer when placed alongside Ofri Cnaani's (2026) analysis of Tuvalu's proposed digital nation and digital twin, where archiving, predictive systems, statehood, cultural preservation and commodification converge. Cnaani is concerned with the transformation of a nation into a digital asset and archive; synthetic islandness extends the question to the much broader everyday production of island representations by generative systems.

This creates a possible feedback problem. Machine-generated material may enter search results, teaching resources and web publishing, where it can later become part of the information environment from which further machine-generated representations are produced. The empirical scale of this process remains to be established. It should therefore be treated as a research hypothesis to be tested through provenance studies and the proposed Island Representation Audit, rather than as an already demonstrated general condition.

## 6. Cultural knowledge, data and the limits of openness

Cultural heritage raises particularly difficult questions because digitisation can be simultaneously enabling and extractive. Archives, oral histories, folklore collections, photographs, linguistic data and community knowledge are valuable for AI research and applications. Digitisation can make inaccessible collections available to island residents and researchers, and language technologies may support work with marginalised linguistic resources.

But availability does not automatically confer an unlimited right of reuse. Indigenous data sovereignty scholarship has stressed that data concerning Indigenous peoples must be governed in ways that recognise collective benefit, authority to control, responsibility and ethics rather

than assuming that technical accessibility overrides community rights (Carroll et al., 2020; Carroll et al., 2021). Recent work on AI extractivism develops this argument further by showing how Indigenous linguistic, ecological and cultural data can be incorporated into AI systems without adequate consent or benefit sharing (Schulz and Loewen-Colón, 2026).

An island-centred AI ethics should therefore resist the assumption that more digitisation and more openness are always beneficial. Some knowledge may require contextual control, restricted access or non-digitisation. At the same time, the analogy with Indigenous data sovereignty must be used cautiously. Indigenous sovereignty rests upon specific political, legal and historical claims and cannot be generalised into a metaphor for all island communities (Kukutai and Taylor, 2016). Indigenous island communities must be partners in defining governance rather than examples inserted into a framework developed elsewhere.

## 7. AI, services and the augmentation-withdrawal test

The practical case for artificial intelligence in island communities remains substantial. Small populations frequently struggle to sustain the breadth of specialist services routinely available in larger centres. AI might assist teachers, administrators, cultural organisations, businesses and community groups whose limited staffing requires individuals to perform multiple roles.

Yet claims about such benefits require evidence. Rather than assuming that AI improves island services, AI-slands proposes an augmentation-withdrawal test. Does a particular application extend the capacity of an existing island institution or professional, or does it make the removal or centralisation of that institution easier?

A remote consultation that supplements locally based healthcare would fall on one side of that distinction; a digital system introduced principally to replace local provision would fall on the other. The same question can be asked of education, administration, heritage and business support. The distinction matters because resilience should not mean asking island communities continually to adapt to the withdrawal of institutions.

Island scholarship has cautioned against treating vulnerability as an automatic consequence of islandness and has shown that characteristics labelled as disadvantages can also sustain social cohesion, adaptation and agency (Kelman, 2018). AI-slands therefore treats service and demographic resilience as empirical outcomes rather than technological promises. Improved digital capacity might make island residence and remote professional work more viable; automation might also reduce employment or encourage centralisation. Both possibilities require study.

## 8. Insular AI sovereignty: the normative response

The normative response proposed here is insular AI sovereignty.

The term requires careful delimitation because digital sovereignty, techno-sovereignty and infrastructural sovereignty are already established and rapidly developing areas of scholarship. Ishkhanyan (2026), for example, distinguishes state, corporate and community or Indigenous forms of techno-sovereignty and emphasises infrastructural chokepoints. AI-slands does not propose a rival general theory of sovereignty.

Insular AI sovereignty instead names a practical, place-based capacity: the ability of island institutions and communities to exercise meaningful influence over how AI enters island society even where they cannot own or reproduce the global infrastructures on which it depends. It concerns procurement, representation, data governance, cultural authority, human oversight, local capacity building, environmental proportionality, correction and redress.

This is intentionally more modest than technological self-sufficiency. Few small jurisdictions could construct foundation models, semiconductor supply chains or hyperscale cloud infrastructure. The relevant question is whether dependence is governable. Can island institutions know which systems they depend upon, negotiate meaningful terms, retain skilled human judgement, audit outcomes, protect sensitive knowledge and exit arrangements that become harmful?

These concerns align with wider AI-governance principles emphasising human oversight, accountability, diversity, environmental sustainability and participation (UNESCO, 2021). The island-centred addition is the insistence that scale, remoteness, external dependency and cultural continuity affect what meaningful oversight actually requires.

Insular AI sovereignty must remain clearly distinct from Indigenous sovereignty. Where Indigenous rights and jurisdiction are involved, Indigenous data governance and self-determination frameworks take precedence over any generic island framework. The CARE principles and recent Indigenous AI governance work demonstrate that authority over data is inseparable from collective rights, historical power relations and benefit sharing (Carroll et al., 2020; Schulz and Loewen-Colón, 2026).

## 9. Islands as sites of responsible innovation

There is a danger that an argument of this kind reproduces precisely the centre-periphery relationship it seeks to criticise by describing islands primarily in terms of vulnerability. AI-slands should avoid this.

Islands are not merely places to which technological change happens, nor should they become convenient laboratories in which metropolitan researchers test innovations on small populations. They possess intellectual traditions, institutional experience and accumulated knowledge about living with constraints, negotiating external dependencies and maintaining local systems at small scale.

Many island communities have long experience of balancing external connection with local control. They have negotiated dependence upon transport systems, energy markets, national governments and distant centres of expertise while maintaining strong local identities and institutions. These experiences sit comfortably within an archipelagic understanding of islands as simultaneously bounded and relational (Stratford et al., 2011).

Those experiences may have significance beyond islands. Artificial intelligence raises questions increasingly relevant everywhere: how much capacity should communities surrender to external platforms? What knowledge should become machine-readable? When should efficiency be subordinated to resilience? Who remains responsible when decisions are automated? The proposition behind AI-slands can therefore be reversed. The question is not simply how islands should adapt to artificial intelligence, but what responsible artificial intelligence can learn from islands.

## 10. Towards an empirical AI-slands research programme

This working paper is deliberately conceptual. Its value ultimately depends upon whether the concepts generate useful empirical questions.

The first proposed study is an Island Representation Audit. A defined set of major AI systems would be asked comparable questions about selected islands, including history, political status, languages, place-names, culture, geography and contemporary conditions. Responses would be evaluated against verified local and scholarly sources. The audit would test algorithmic mainlanding and digital double insularity rather than assuming them.

A second strand would examine synthetic islandness through provenance and representation studies: what kinds of island imagery and narratives are being generated, which source traditions appear to dominate, and how do machine-generated representations compare with locally produced accounts? Tuvalu's digital-nation project provides one particularly important comparative case for thinking about digitised statehood, archives and cultural representation (Cnaani, 2026).

A third strand would examine the augmentation-withdrawal test in essential island services, while a fourth would examine infrastructure and governance. AI has direct implications for energy demand and data-centre development, while applications may also assist the management of decentralised energy systems (IEA, 2025). Recent SIDS scholarship already demonstrates the importance of context-sensitive AI governance and local capacity (Addison, 2026).

Comparative work should include islands with contrasting political and cultural conditions rather than assuming a single model of islandness. Potential cases include Shetland, the Faroe Islands, Greenland, smaller Icelandic islands, Atlantic Canadian communities, Åland and selected SIDS. The aim would be to identify which outcomes arise from island-related conditions

and which arise from sovereignty, income, infrastructure, colonial history or institutional capacity.

Community research should ask not only what AI can do but what islanders believe it should do. Two questions provide a useful starting point: What should AI help your island to preserve, improve or achieve? What should never be surrendered to an AI system? The answers are unlikely to be identical from one island to another. That is precisely the point.

## Conclusion

Artificial intelligence presents island communities with neither a straightforward solution to geographical disadvantage nor an inevitable new form of technological colonialism. Its effects will depend upon how systems are designed, governed and used.

The conceptual contribution of AI-slands is to make a particular contradiction visible. AI can compress geographical distance while increasing infrastructural dependence; it can increase access while reproducing representational distance; and it can generate cultural visibility while weakening control over how island knowledge is represented and reused.

The paper has organised that problem as an analytical sequence rather than a collection of equivalent concepts. AI archipelagos provides the spatial frame. Algorithmic mainlanding identifies an island-specific mechanism of contextual misrecognition. Digital double insularity and synthetic islandness identify possible effects. Insular AI sovereignty describes a practical governance response centred on local agency.

These concepts remain propositions. Their scholarly value will depend upon empirical testing, especially through comparative case studies and the Island Representation Audit. That is a strength rather than a weakness for a working paper: it converts a broad concern about AI and islands into a programme of research capable of being confirmed, revised or rejected.

AI-slands therefore begins with islands, but its implications extend beyond them. As societies everywhere become more dependent upon concentrated technological infrastructures, islands offer a particularly clear vantage point on a problem increasingly shared by all communities: how to remain connected without surrendering the capacity to determine one's own future.

The question is not simply how islands should adapt to artificial intelligence. It is what responsible artificial intelligence can learn from islands.

## References

Addison, L. (2026) 'Ethical governance and artificial intelligence for climate resilience in small island developing states', Journal of Information, Communication and Ethics in Society, 24(2), pp. 234-249. https://doi.org/10.1108/JICES-04-2025-0093.

Baldacchino, G. (2006) 'Islands, Island Studies, Island Studies Journal', Island Studies Journal, 1(1), pp. 3-18. https://doi.org/10.24043/isj.185.

Bender, E.M., Gebru, T., McMillan-Major, A. and Shmitchell, S. (2021) 'On the dangers of stochastic parrots: Can language models be too big?', in Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency, pp. 610-623. https://doi.org/10.1145/3442188.3445922.

Carroll, S.R., Garba, I., Figueroa-Rodriguez, O.L. et al. (2020) 'The CARE Principles for Indigenous Data Governance', Data Science Journal, 19, 43, pp. 1-12. https://doi.org/10.5334/dsj-2020-043.

Carroll, S.R., Herczog, E., Hudson, M., Russell, K. and Stall, S. (2021) 'Operationalizing the CARE and FAIR Principles for Indigenous data futures', Scientific Data, 8, 108. https://doi.org/10.1038/s41597-021-00892-0.

Cnaani, O. (2026) 'From island to asset: Archiving the first ex situ nation', Cambridge Forum on AI: Culture and Society, 2, e22. https://doi.org/10.1017/cfc.2026.10033.

Couldry, N. and Mejias, U.A. (2019) The Costs of Connection: How Data Is Colonizing Human Life and Appropriating It for Capitalism. Stanford, CA: Stanford University Press. https://doi.org/10.1515/9781503609754.

Crawford, K. (2021) Atlas of AI: Power, Politics, and the Planetary Costs of Artificial Intelligence. New Haven, CT: Yale University Press. https://doi.org/10.12987/9780300252392.

Hay, P. (2006) 'A phenomenology of islands', Island Studies Journal, 1(1), pp. 19-42. https://doi.org/10.24043/isj.186.

IEA (2025) Energy and AI. Paris: International Energy Agency. Available at: https://www.iea.org/reports/energy-and-ai (Accessed: 9 September 2026).

Ishkhanyan, A. (2026) 'Digital colonialism, techno-sovereignty, and infrastructural power', Frontiers in Political Science, 8, 1811790. https://doi.org/10.3389/fpos.2026.1811790.

Joshi, P., Santy, S., Budhiraja, A., Bali, K. and Choudhury, M. (2020) 'The state and fate of linguistic diversity and inclusion in the NLP world', in Proceedings of the 58th Annual Meeting of the Association for Computational Linguistics, pp. 6282-6293. https://doi.org/10.18653/v1/2020.acl-main.560.

Kelman, I. (2018) 'Islandness within climate change narratives of Small Island Developing States (SIDS)', Island Studies Journal, 13(1), pp. 149-166. https://doi.org/10.24043/isj.52.

Kukutai, T. and Taylor, J. (eds.) (2016) Indigenous Data Sovereignty: Toward an Agenda. Canberra: ANU Press. https://doi.org/10.22459/CAEPR38.11.2016.

Pugh, J. (2018) 'Relationality and island studies in the Anthropocene', Island Studies Journal, 13(2), pp. 93-110. https://doi.org/10.24043/isj.48.

Rella, L. (2026) 'What the edge tells the cloud: decentralized geographies of AI', AI & Society. Advance online publication. https://doi.org/10.1007/s00146-026-03169-5.

Schulz, M. and Loewen-Colón, J. (2026) 'Preventing AI extractivism: the case for braiding indigenous data justice with ABS for stronger AI data governance', AI & Society, 41, pp. 6405-6419. https://doi.org/10.1007/s00146-026-02931-z.

Stratford, E., Baldacchino, G., McMahon, E., Farbotko, C. and Harwood, A. (2011) 'Envisioning the archipelago', Island Studies Journal, 6(2), pp. 113-130. https://doi.org/10.24043/isj.253.

UNESCO (2021) Recommendation on the Ethics of Artificial Intelligence. Paris: UNESCO.

UNESCO (2024) Needs Assessment for Artificial Intelligence, Digital Transformation and Open Data for Small Island Developing States. Paris: UNESCO. https://doi.org/10.58338/DEMF2854.