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The Geneva Challenge 2026: Challenges to the Future of Work

SciUzGram

"Where research finds its audience – and its community"

Addressing Challenges to the Future of Work

From Invisibility to Inclusion: A Digital Platform for the Recognition and Global Integration of Central Asian Researchers

Asia Team – Uzbekistan

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ABSTRACT

Scientific research in developing countries remains slow, isolated, and heavily bureaucratic. Talented researchers – both early-career and established – often lack access to the latest developments in their field, cannot afford to attend international conferences where leading scientists meet, and struggle to find collaborators working on related problems. Meanwhile, scholarly communication still largely happens through formal, asynchronous channels such as email, even as nearly every other domain of professional life has moved toward instant, visual, and social forms of exchange. This mismatch between how science is actually produced – through iterative, informal exchange of ideas – and how researchers are equipped to communicate slows down discovery and leaves researchers in Central Asia and other developing regions structurally disconnected from the frontier of their own disciplines.

We propose SciUzGram, a social discovery platform that lets researchers follow current, in-progress research, connect with people working on similar questions, and share hypotheses, methods, and early findings in real time rather than waiting for formal publication. By making the everyday process of research visible and shareable, SciUzGram helps researchers stay current in their field, find genuine collaborators, and gain visibility for their work regardless of their institution's international standing.

Two supporting mechanisms make this openness workable. A timestamped priority record protects researchers who share unpublished ideas from having their work appropriated before formal publication. A language-support tool helps non-native English speakers present their work clearly.

The expected impact is threefold: an increase in genuine international collaborations initiated from Central Asia; a faster overall research cycle, as researchers get feedback and avoid duplicating work already underway elsewhere; and greater recognition of individual researchers and institutions.

Keywords: *research visibility, scientific collaboration, developing countries, science communication, idea priority protection, Central Asia, international partnerships*

** Artificial Intelligence (AI) was used for this project to assist with the design of the platform's interface mockup and to search and summarize academic literature; all critical reasoning, arguments, and decisions were made by the authors.*

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1. Introduction

The future of work is being reshaped by automation, the platform economy, and a growing premium placed on visibility and networked reputation. Much of the public debate about this shift focuses on manual and routine occupations, such as drivers, warehouse workers, and customer service agents, whose tasks are being restructured by algorithms and artificial intelligence. Less attention is paid to a profession that is itself a central part of that future: scientific research.

Research work is also changing. Preprint servers now allow findings to circulate before formal peer review. Open science initiatives encourage researchers to share data and methods earlier in the process. Artificial intelligence tools are being used to search literature, translate papers, and draft manuscripts. Taken together, these changes are gradually shifting scientific communication away from a small number of formal, once-a-year events and toward more frequent, informal, and digital exchange. This shift is uneven, however, and it does not reach all researchers equally.

In many well-resourced departments, researchers benefit from dense informal networks: weekly lab meetings, seminars, alumni contacts, and regular attendance at international conferences where they meet others working on similar problems. Researchers in Central Asia do attend international conferences and do take part in these exchanges, but less often and with more difficulty than colleagues in wealthier countries. Funding is limited, and even when funding is available, travel is not guaranteed. Visa procedures for many international destinations are slow, costly in terms of time, and inconsistent in outcome, and these procedures affect researchers from Central Asia and other developing regions more than researchers from wealthier countries. Table 1 summarises some of the documented costs of this barrier.

Barrier	Reported figure	Source
Registration and travel cost per international conference	USD 600 to 3,000, depending on destination and origin country	iConf (2025); Global Conference (2024)
Average time spent preparing a single visa application	More than 10 hours	The Conversation (2015, reporting on a survey of developing-country scientists)
Scientists from developing countries who lost a professional opportunity due to visa delay or denial	34%	The Conversation (2015)
Learned societies in ecology and evolution offering fee discounts for Global South members	43% of 182 societies surveyed	Priced Out of Belonging?, PMC (2024)

Table 1. Reported barriers to international conference participation for researchers from developing countries.

These barriers are more than a logistical inconvenience. When conference attendance, and the informal exchange that happens there, is harder to reach for some researchers than others, the resulting gap in professional contacts tends to persist and grow over a career. Communication between institutions in Central Asia and international partners still relies heavily on formal channels such as email, which are slower and less suited to the kind of quick, informal exchange that drives early-stage research forward.

Scholars of science studies have described this general pattern as a form of cumulative advantage, known since Merton's foundational study as the “Matthew effect”: researchers who are already visible tend to receive disproportionate credit and attention for further work, while comparable contributions from less visible researchers go unnoticed. Existing digital platforms for researchers, such as ResearchGate, Academia.edu, or LinkedIn, were built to display finished credentials and existing networks. They were not designed to help a researcher without either of these things get noticed.

This project responds to the future of work in science by proposing a change to how researchers exchange ideas, not to the content of their research. We ask a simple question: what would scholarly communication look like if it were designed today, for researchers who currently have limited access to the international community in their field? Our answer, SciUzGram, is a discovery-oriented platform that treats the everyday, unfinished work of research, such as a hypothesis, a dataset, or a methodological question, as something worth sharing and discussing early, rather than something to withhold until a peer-reviewed article is ready. The aim is to shorten the distance between a researcher in Tashkent and a potential collaborator, mentor, or reader elsewhere in the world.

The remainder of this proposal is organised as follows. Section 2 sets out the problem in more detail, drawing on the sociology of science and on the specific situation of researchers in Central Asia. Section 3 reviews the relevant literature. Section 4 compares SciUzGram to existing academic platforms and mentoring initiatives. Section 5 addresses the legal questions raised by open, real-time sharing of unpublished research, particularly the risk of idea appropriation, known as scooping. Section 6 presents the proposed platform in detail, including its matching architecture and interface. Sections 7 through 10 discuss stakeholders, implementation, budget, and evaluation, before the conclusion in Section 11.

2. Problem Statement

2.1. The visibility mechanism (Matthew effect)

Sociologists of science have long observed that recognition in research does not flow only in proportion to the quality of a contribution. Robert Merton described this pattern as the “Matthew effect”: researchers who already hold visibility and status tend to receive disproportionate credit for further work, while comparable contributions from less visible researchers go unnoticed. Visibility tends to reinforce itself, so small early differences in access to networks can grow into large differences in opportunity over the course of a career.

This mechanism has also been measured directly. Table 2 summarises findings from two studies of authorship patterns in international research collaborations.

Indicator	Reported figure	Source
Likelihood of a researcher from a low or lower-middle income country appearing as first author, compared to a high-income country counterpart, within the same collaborative projects	Odds ratio 0.21	IeDEA Southern Africa Collaboration (2023)
Likelihood of appearing as last author, under the same comparison	Odds ratio 0.20	IeDEA Southern Africa Collaboration (2023)

Indicator	Reported figure	Source
Studies about Africa (2013 to 2016) that included no African co-author at all	13.5%	Systematic review of African health research authorship (2023)

Table 2. Measured authorship inequality in international research collaborations.

Demeter documents this pattern more broadly as a three-dimensional stratification of global academic knowledge production, spanning authorship, citation, and editorial board membership. These findings indicate that visibility gaps of the kind described in this section are structural and measurable, not incidental.

2.2. Illustrative case insight

Consider Malika, a PhD candidate in environmental science at a university in Tashkent. She is testing whether soil salinity data correlates with cotton yield in the Khorezm region. Her early regression results look promising, though her sample size is small, and she suspects a spatial clustering effect that she does not have the specialised statistical training to confirm. In a well-resourced department, she might raise the question at a weekly lab meeting and receive an answer within days. Instead, she has no easy way to know whether a researcher elsewhere, for instance at a laboratory in the United States, has already solved a similar problem using a spatial lag model. Without a shared space in which to make her early-stage question visible to people working on related problems, Malika continues alone, at the cost of months of avoidable delay, and her work remains invisible to the people who could accelerate it or vouch for it later in her career.

2.3. Systemic limitations of existing platforms

Digital tools already exist that aim to connect researchers internationally, yet they do not resolve the mechanism described above. Table 3 offers a brief comparison of two existing approaches with the platform proposed in this project; a fuller comparison follows in Section 4.

Platform	Primary content	Basis for visibility	Matching mechanism
ResearchGate / Academia.edu	Finished publications and profiles	Citation counts, profile views, follower-style scores	None; researchers must search manually
AuthorAID (est. 2008)	Formal mentoring requests	Application and staff review	Administered, one-to-one pairing
SciUzGram (proposed)	In-progress hypotheses, questions, early results	Relevance to current topic and method	Automated, based on content

Table 3. Snapshot comparison of researcher-facing platforms, constructed by the authors from platform documentation and programme records.

Academic social networks such as ResearchGate and Academia.edu organise visibility around metrics of existing influence. Researchers themselves have described these metrics as measuring “the gauziest of academic qualities: influence”. This design rewards researchers who are already well known rather than surfacing researchers on the basis of what they are

currently working on. Structured mentoring initiatives such as AuthorAID demonstrate that cross-border mentorship is both feasible and effective. Partner institutions have reported publication output more than tripling after sustained mentoring support. Such programmes, however, rely on manual matching and administered pairing rather than the kind of continuous, self-organising discovery that would allow a researcher like Malika to be found as soon as her question becomes relevant to someone else.

2.4. The language barrier

Even when visibility is achieved, researchers who are not native English speakers face a second, compounding disadvantage. Table 4 reports findings from a 2023 survey of 908 environmental scientists across eight countries.

Indicator	Reported figure
Additional time spent reading a paper in English, low-proficiency non-native speakers compared to native speakers	+90.8%
Additional time spent writing a manuscript in English	up to +51%
Survey sample	908 researchers, 8 countries

Table 4. Reported time cost of the language barrier for non-native English speaking researchers.

Their papers were also more frequently rejected or sent back for revision specifically because of language, independent of the underlying quality of the science. For a platform intended to surface early-stage, informally worded ideas rather than polished, professionally edited manuscripts, this barrier is especially significant: an imprecisely phrased hypothesis is easy to dismiss, regardless of its scientific merit. Any response to the visibility problem described in this chapter must therefore also reduce the linguistic cost of being understood.

2.5. Brain drain and brain circulation in Central Asia

Central Asia illustrates the visibility problem in a specific and well-documented way. Since independence, the region has experienced a sustained outflow of scientific and highly qualified personnel, a trend that accelerated after funding for science declined sharply during the 1990s. Table 5 summarises recent indicators of this pattern.

Indicator	Reported figure	Source
Central Asian students enrolled in universities abroad	Approximately 100,000, an increase of more than 60% since 2000	Jamestown Foundation (2025)
Central Asian students abroad who intend to return home immediately after graduation	21%	Oxus Society for Central Asian Affairs (2020)
Central Asian students abroad who intend to work abroad for several years before returning	67%	Oxus Society for Central Asian Affairs (2020)

Indicator	Reported figure	Source
Uzbek citizens who received residence visas in major destination countries, 2016 to 2019	Approximately 277,000	Oxus Society for Central Asian Affairs (2020)

Table 5. Central Asian student and skilled emigration indicators.

The Uzbek government has responded with initiatives such as El-Yurt Umidi, which funds training abroad and maintains contact with émigré professionals, but researchers who have already left often cite limited funding and weak institutional support as reasons not to return. Some scholars describe this pattern as brain circulation rather than simple brain drain: researchers who spend time abroad while maintaining active ties to colleagues at home can continue to contribute to their country of origin's research capacity even without a permanent return. SciUzGram is designed to support this kind of circulation directly. A researcher who has left Uzbekistan can continue to appear in the feed of colleagues who remain there, and a researcher who has stayed can remain visible to those who left, so that emigration does not have to mean a complete loss of connection to the country's scientific community.

3. Literature Review and Theoretical Background

This section reviews six bodies of literature that inform SciUzGram's design: network effects theory, open science and preprint research, equitable research partnerships, social capital theory, the digital divide, and science communication. Each links to a specific design choice discussed later in this proposal.

3.1. Network effects and the cold start problem

Digital platforms that depend on interaction between many users face what technology researchers call the cold start problem: a platform with few users offers little value, and a platform with little value attracts few users. Andrew Chen argues that successful network platforms rarely launch for an entire market at once. Instead, they first establish an atomic network, a small, self-sufficient group of users, before expanding outward, much as Slack launched inside a single company before becoming a general workplace tool. Chen also distinguishes between the two sides of a network, noting that one side, the hard side, is usually harder to attract. For SciUzGram, early-career researchers are the easy side, since they have a clear incentive to join; established researchers and mentors, who already have functioning networks, are the hard side and require direct invitations tied to a specific discipline rather than a general call to join.

This has a direct implication for how SciUzGram should be introduced: rather than launching for all researchers globally, the project draws on one discipline across a small number of Central Asian universities together with a matching set of international collaborators as its atomic network, an approach developed further in Section 8.

3.2. Open science and the preprint movement

The idea that unpublished research is worth sharing before formal review has an established precedent: preprint servers allow findings to circulate before peer review, and adoption has grown over the past decade, though unevenly across regions, being considerably more common among scientists in North America and Europe. Research on preprint adoption identifies both

technical barriers, such as unfamiliarity with posting platforms, and social barriers, such as concern about how a preprint will be perceived by senior colleagues.

A frequently documented social barrier is the fear of scooping, the concern that another researcher will publish a similar finding first and receive the credit. This concern is unevenly distributed: researchers with fewer institutional resources report feeling more exposed to scooping than those at well-funded laboratories. In response, some publishers now apply a scooping protection policy that treats the date of a preprint as evidence of priority, a precedent that supports the mechanism proposed for SciUzGram in Section 5: if a dated public record is accepted practice for full preprints, a comparable mechanism can reasonably extend to earlier, less formal research updates.

3.3. Equitable research partnerships

A separate body of work addresses the terms on which international research collaboration should take place. The TRUST Code, adopted as a reference document by the European Commission for its funding recipients, sets out four principles for cross-border partnerships: fairness, respect for local laws and customs, care for participants' wellbeing, and honesty in reporting results and assigning credit. Related work has criticised many North-South collaborations for reproducing a donor-recipient structure, sometimes called helicopter research or parachute science, in which wealthier-country researchers define the questions while lower-income-country researchers provide access to data or field sites without a corresponding share of authorship. These principles inform the design choices in Sections 5 and 6, particularly the decision to base matching on the content of a research question rather than institutional affiliation or funding source.

3.4. Social capital and the strength of weak ties

A classic finding in network sociology, established by Mark Granovetter, is that acquaintances, or weak ties, are often more valuable for finding new information than close colleagues, or strong ties. Granovetter's explanation is structural: a researcher's close colleagues tend to know the same people and information the researcher already knows, since strong ties cluster into overlapping groups, while a weak tie is more likely to sit in a different cluster and introduce genuinely new information, such as a relevant dataset or a suitable collaborator working on an adjacent problem.

This matters directly for the problem in Section 2. Researchers in well-connected departments accumulate weak ties naturally, through conferences, seminars, and alumni networks. Researchers with fewer opportunities to travel have correspondingly fewer weak ties, not because they know fewer people, but because those people belong to the same local cluster. SciUzGram is best understood as infrastructure for generating weak ties across geographic and institutional boundaries: its matching mechanism is designed to surface people outside a researcher's existing cluster who are working on a related question.

3.5. The digital divide and unequal access to research infrastructure

Research on the digital divide has moved beyond a simple distinction between those with internet access and those without. Jan van Dijk's widely used framework describes access as accumulating in stages: motivation, physical access, skills, and finally meaningful usage. A researcher in Central Asia today likely has basic physical access, so the more relevant gaps lie

at the skills and usage stages: familiarity with international academic platforms, comfort posting in English, and awareness that such platforms exist.

This distinction has also been applied to open science: disparities in ICT provision between lower- and higher-income countries continue to shape who can meaningfully participate in online scholarly exchange, even where basic connectivity exists. For SciUzGram, this means the platform must work reliably on modest mobile connections, must not assume native-level English given the language barrier in Section 2.4, and must be actively introduced to researchers who may not know that informal, real-time academic sharing is possible.

3.6. Science communication and informal knowledge sharing

A separate strand of research examines how short-form, informal media has changed public engagement with science. Studies of short videos on platforms such as TikTok, Instagram Reels, and YouTube Shorts report substantially higher reach than longer, traditionally produced content: one study of geoscience communication found median views three times higher on TikTok than on Instagram Reels, and twenty-five times higher than on YouTube Shorts. A separate analysis of over 250,000 comments on TikTok science videos found that short, informal content can support genuine knowledge construction, not only surface-level engagement.

This literature has mostly examined communication from scientists to the public. This project's premise is that a comparable shift can occur between researchers themselves: if short, informal updates are effective at conveying science to a general audience, a similar format adapted for a professional audience is a reasonable design basis for the SciUzGram feed in Section 6, in place of the longer, formal updates current academic platforms expect.

Taken together, these six bodies of work shape this proposal. Network effects inform the launch strategy in Section 8; open science and preprints support the priority mechanism in Section 5; equitable partnerships and social capital inform the matching logic and stakeholder relationships in Sections 6 and 7; and the digital divide and science communication inform the interface and content format in Section 6. Table 6 summarises this mapping.

Theoretical framework	Key source	Applied in
Network effects / cold start problem	Chen (2021)	Section 8, launch strategy
Open science / preprints and scooping	Ni (2024); Kamoun (2022)	Section 5, priority mechanism
Equitable research partnerships	TRUST Code (2018)	Sections 5 and 6, matching logic
Social capital / strength of weak ties	Granovetter (1973)	Section 6, matching rationale
Digital divide	van Dijk (2005)	Section 6, interface design
Science communication / short-form media	Zawacki (2023)	Section 6, content format

Table 6. Theoretical frameworks reviewed in this chapter and where each is applied later in the proposal.

4. Comparative Analysis with Existing Platforms

This chapter compares SciUzGram to three types of existing infrastructure that a researcher might otherwise use: general academic social networks, general professional networks, and structured mentoring programmes. Each subsection reviews one example in more detail than was possible in Section 2, before Section 4.4 brings the comparison together in a single table and Section 4.5 addresses directly why this gap in existing provision has not already been closed.

4.1. ResearchGate and Academia.edu

ResearchGate is free to join, but membership requires an email address from a recognised institution or manual verification as a published researcher. The platform published an author-level “RG Score” from 2012 until its discontinuation in July 2022, after users and researchers questioned its calculation methodology and reliability. Academia.edu does not require institutional verification, but its premium tier, which unlocks reader analytics and enhanced search, has increased in price over time, with some users reporting a jump from 99 to 499 United States dollars a year. Neither platform is built around unfinished work: both are structured for uploading and discovering completed papers, and neither offers a mechanism for establishing priority over an idea before it is written up.

4.2. LinkedIn

LinkedIn is a general professional network rather than a tool built for research specifically. It is free to join, with a paid Premium tier priced for general professional use rather than for academic budgets. Its feed algorithm favours posts that generate engagement from a user's existing connections, which means a researcher without an established following is unlikely to be shown to relevant strangers, regardless of the quality of what they post. LinkedIn has no structure for citing prior work, no field for a research question or method, and no mechanism for recording the date on which an idea was first shared. It is, in short, a network for career visibility in general, not for the specific problem addressed in this proposal.

4.3. AuthorAID

AuthorAID, run by the non-profit organisation INASP since 2008, pairs researchers in developing countries with volunteer mentors from around the world. The programme is free to join and has demonstrated real impact: at the Tanzania Fisheries Research Institute, publication output more than tripled between 2016 and 2019 following sustained AuthorAID mentoring. This confirms that cross-border mentorship for researchers from developing countries is both wanted and effective. AuthorAID's model, however, depends on a limited number of volunteer mentors and a staff-mediated application and pairing process. A researcher must apply and wait to be matched, rather than being discovered continuously as their work develops, and the programme has no equivalent to a live feed of current research questions.

4.4. Summary comparison

Table 7 draws together the comparison across the dimensions most relevant to the problem set out in Section 2: cost and accessibility for researchers with limited institutional budgets, whether the platform offers any language support for non-native English speakers, and whether it offers any mechanism for protecting the priority of an idea shared before formal publication.

Platform	Cost for an individual researcher	Language support	Idea priority protection
ResearchGate / Academia.edu	Free to join; premium features from USD 99 to 499 per year	None built in	None; content is expected to be finished work
LinkedIn	Free; Premium tier priced for general professional use	None built in	None
AuthorAID	Free	Mentors may assist informally with writing	Not applicable; not designed for sharing unpublished ideas publicly
SciUzGram (proposed)	Free for individual researchers	Built-in language support tool (Section 6)	Timestamped priority record (Section 5)

Table 7. Summary comparison of SciUzGram with existing platforms and programmes.

4.5. Why this gap remains open

A reasonable question is why, if this gap is real, no existing platform has already closed it. Three factors help explain this. First, ResearchGate and Academia.edu are commercial companies whose business model depends on a large user base with completed publications to display and monetise; their incentive is to keep users producing content that fits the existing format, not to redesign that format around unfinished work. Second, LinkedIn's product is deliberately general, built to serve every profession at once, which leaves little room for features specific to the needs of researchers, such as citation of prior work or protection of an unpublished idea. Third, AuthorAID demonstrates that mentorship for researchers from developing countries works, but it was built as a staff-run programme rather than as self-organising software, which limits how many researchers it can serve at once and how quickly a new match can be made. SciUzGram is not a claim that no one has tried to help researchers in this position. It is a claim that the specific combination proposed here, a public, dated, topic-matched feed of unfinished research, has not yet been built, and that the theoretical and empirical grounds set out in Sections 2 and 3 explain why it is worth building now.

5. Legal Framework

This chapter sets out the legal reasoning behind the platform's central design safeguard, the protection of researchers who share unpublished ideas. It proceeds in four steps: why copyright law alone cannot protect a shared idea, what mechanism the platform offers instead, how the platform positions itself across borders and legal systems, and how it protects the personal data of its users.

5.1. The idea-expression dichotomy

Copyright law protects the particular way a piece of writing, image, or dataset is expressed, not the underlying idea, method, or finding it describes. This principle, known as the idea-expression dichotomy, is written directly into international law: the TRIPS Agreement states that copyright protection extends to expressions and not to ideas, procedures, methods of operation, or mathematical concepts as such. The principle has a long history in national law

as well. In the United States case Baker v. Selden, the Supreme Court held that copyright in a book describing a bookkeeping system did not give the author any right to prevent others from using the accounting method itself. The same logic applies directly to a hypothesis, a research question, or a preliminary finding shared on SciUzGram: copyright law would protect the specific wording of a post, but not the underlying scientific idea, which means copyright cannot by itself be the basis of the protection this platform needs to offer.

This is not a weakness particular to SciUzGram. It is a general feature of intellectual property law that applies equally to conversations at a conference, a comment in a seminar, or an idea mentioned in an email. What copyright cannot do is establish that a given person raised a given idea on a given date. That is a question of evidence, not of copyright, and it is addressed directly in Section 5.2.

5.2. A timestamped priority mechanism

Because the underlying idea cannot be protected as such, the platform's safeguard is designed to do something narrower and more achievable: to create a reliable, dated record of who shared a given research idea and when. This follows a precedent already accepted in scientific publishing. Preprint servers establish priority in practice by recording a public, time-stamped version of a paper, and some publishers formally recognise this date as evidence of priority when a dispute arises. SciUzGram applies the same logic to earlier and less formal stages of research. Every post receives a server-generated timestamp at the moment of publication, recorded in a log that the author cannot edit retroactively; any later edit to a post is preserved as a separate, dated version rather than overwriting the original. This does not prevent someone from reading an idea and pursuing it independently, just as a preprint does not prevent this. It ensures that, if a dispute over priority arises later, there is a neutral, dated record that both parties and any outside body can consult.

Each author retains ownership of what they post and chooses the licence under which it may be reused by others. The default option offered to authors is a standard Creative Commons Attribution licence, which permits others to build on the work provided the original author is credited, though an author may instead mark a post as visible only to the platform's community, or restrict it to a smaller group of invited collaborators, before deciding whether to release it more widely. This gives a researcher control over how openly an idea is shared while still generating the dated record described above.

Figure 1. Timestamped priority mechanism

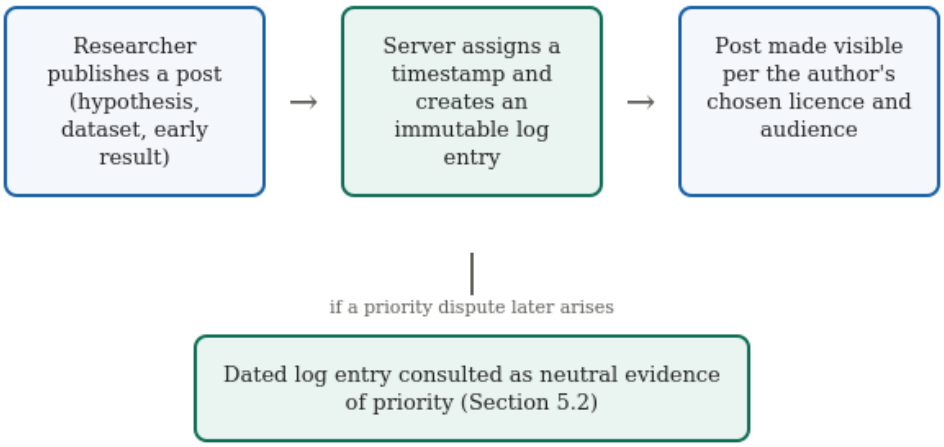

Figure 1. The timestamped priority mechanism described in Section 5.2.

5.3. Cross-border collaboration and jurisdiction

Because SciUzGram is intended to connect researchers across national borders, its terms of service must specify which law governs the platform and how disputes between users in different countries are resolved. This proposal adopts a data protection and user-rights framework aligned with the European Union's General Data Protection Regulation, consistent with the fairness and honesty principles of the TRUST Code discussed in Section 3.3. This choice is practical rather than symbolic: a GDPR-aligned framework is already a recognised international benchmark, which reduces the legal burden on international partner institutions that already comply with it, and it gives individual researchers clear, enforceable rights over their own data and content regardless of where they are based.

Adopting a single reference framework for the platform's general terms does not remove the need to comply with the domestic law of the country in which a user resides, and the clearest example of this is discussed in Section 5.4.

5.4. Personal data protection

The platform's user base includes a significant share of researchers who are citizens of Uzbekistan, and Uzbekistan has its own personal data law, independent of whatever general framework the platform's terms of service adopt. The Law of the Republic of Uzbekistan “On Personal Data”, adopted in 2019, governs the processing of personal data of Uzbek citizens, and a 2021 amendment added a specific localisation requirement: the personal data of Uzbek citizens processed through internet-based services must be collected, organised, and stored on technical infrastructure physically located within Uzbekistan, in a database registered with the national data protection authority. This requirement is not unique to SciUzGram. It has already been applied to major international platforms operating in the country, and non-compliance carries administrative and, in cases of repeated violation, criminal liability under Uzbek law.

The practical consequence for SciUzGram's design is that a single, purely foreign legal framework cannot be adopted for every user. The platform's approach is therefore layered rather than uniform: a GDPR-aligned baseline of user rights, such as the right to access, correct, or delete one's own data, applies to all users regardless of location, while the personal data of users who are Uzbek citizens is additionally stored on infrastructure located in Uzbekistan and registered with the relevant national authority, in order to satisfy the localisation requirement described above. This layered approach is consistent with the equitable partnership principles discussed in Section 3.3: it treats compliance with the law of a researcher's own country as a baseline obligation, not an inconvenience to be routed around through a foreign choice-of-law clause.

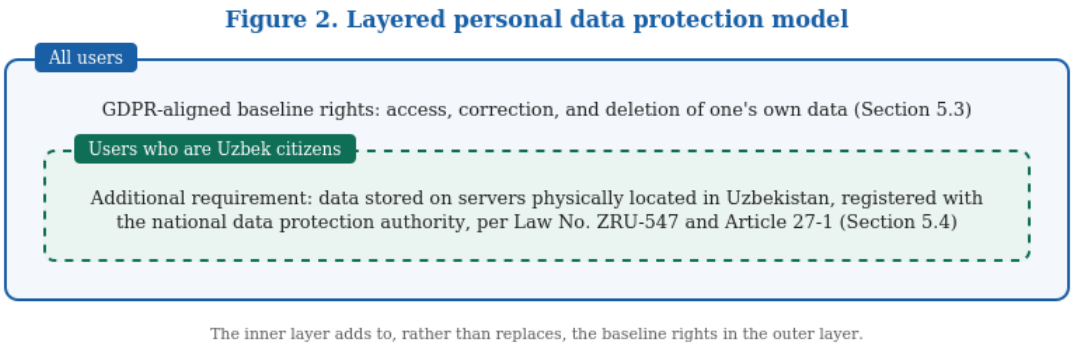

Figure 2. The layered personal data protection model described in Section 5.4.

6. The Proposed Solution: SciUzGram

This chapter brings together the problem in Section 2, the theoretical grounding in Section 3, the gap identified in Section 4, and the legal safeguards in Section 5, and presents the platform that responds to all four.

6.1. Platform overview

SciUzGram is a feed-based platform in which the primary unit of content is a short, dated post about research in progress, rather than a finished publication. A post may contain a hypothesis, a preliminary dataset or chart, a methodological question, or a short update on work that is still underway. Each post carries the timestamped priority record described in Section 5.2, is written in plain language rather than formal academic prose, and is visible according to whichever audience setting the author chooses.

A researcher's day-to-day experience of SciUzGram is deliberately different from the platforms reviewed in Section 4. Instead of building a profile around completed publications and waiting to be found, a researcher posts a live question or result and is shown, and shown to, others working on related material. Malika, introduced in Section 2.2, would use SciUzGram not to advertise her eventual paper on soil salinity and cotton yield, but to post the specific, unresolved question she has right now, at the point where a comment from someone else could still change the direction of her work.

6.2. Matching algorithm

SciUzGram connects researchers to relevant people and posts through a hybrid matching approach that combines two layers. The first layer is author-assigned: at registration, and again when writing each post, a researcher selects topic and method tags from a structured list, for example a discipline, a sub-field, and a research method. These tags are the same kind of explicit, author-controlled metadata already used successfully in preprint servers and are simple enough to use on a modest mobile connection, consistent with the digital divide literature discussed in Section 3.5.

The second layer is automated. A natural language processing model reads the text of each post and suggests additional tags the author may have left out, and compares the content of new posts against the standing interests and recent posts of other users, surfacing potential matches that pure keyword tagging alone would miss, for instance where two researchers describe a similar statistical problem using different terminology. The automated layer is deliberately a

supplement to, not a replacement for, the author-assigned tags: the author's own description of their work remains the primary signal, and the system's suggestions can be accepted or ignored. This design follows directly from the theoretical grounding in Section 3.4: because the platform's purpose is to generate weak ties across clusters a researcher does not already belong to, matching is based on the content of a research question rather than on institutional affiliation, funding source, or existing follower count, in line with the equitable partnership principles reviewed in Section 3.3.

6.3. Platform mockup

This section presents SciUzGram's core screens on mobile and web, following a researcher through the full cycle from Sections 6.1 and 6.2: creating an account, reading the feed, viewing and commenting on a post, publishing an update, finding collaborators, and messaging a match. All screens share the timestamped priority badge from Section 5.2, author-assigned tags from Section 6.2, and plain, informal language rather than formal academic prose.

Registration asks only for the information needed to make matching and language support work from the first post: institution, country, and primary discipline. Consistent with the layered data protection model in Section 5.4, the account terms already distinguish between baseline rights for all users and the additional storage terms for Uzbek citizens.

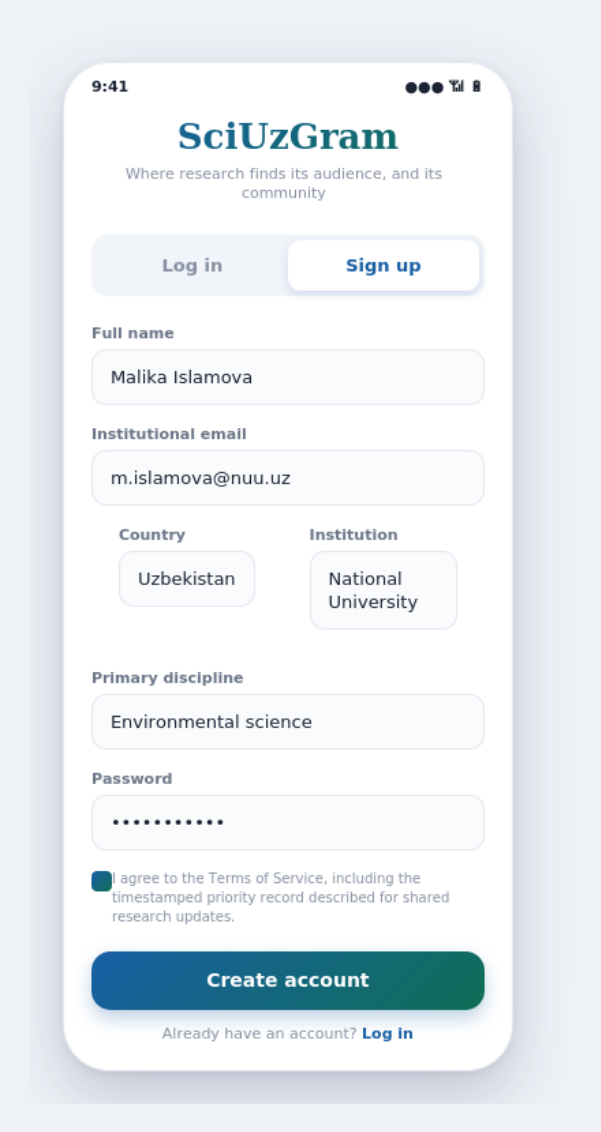

Figure 3. Account creation, showing the fields used for matching and the terms consistent with Section 5.4.

The feed is the researcher's main screen. A row of stories at the top surfaces researchers who are currently active, and each card below shows a single in-progress update with its timestamp badge, tags, and lightweight reactions, rather than a citation count.

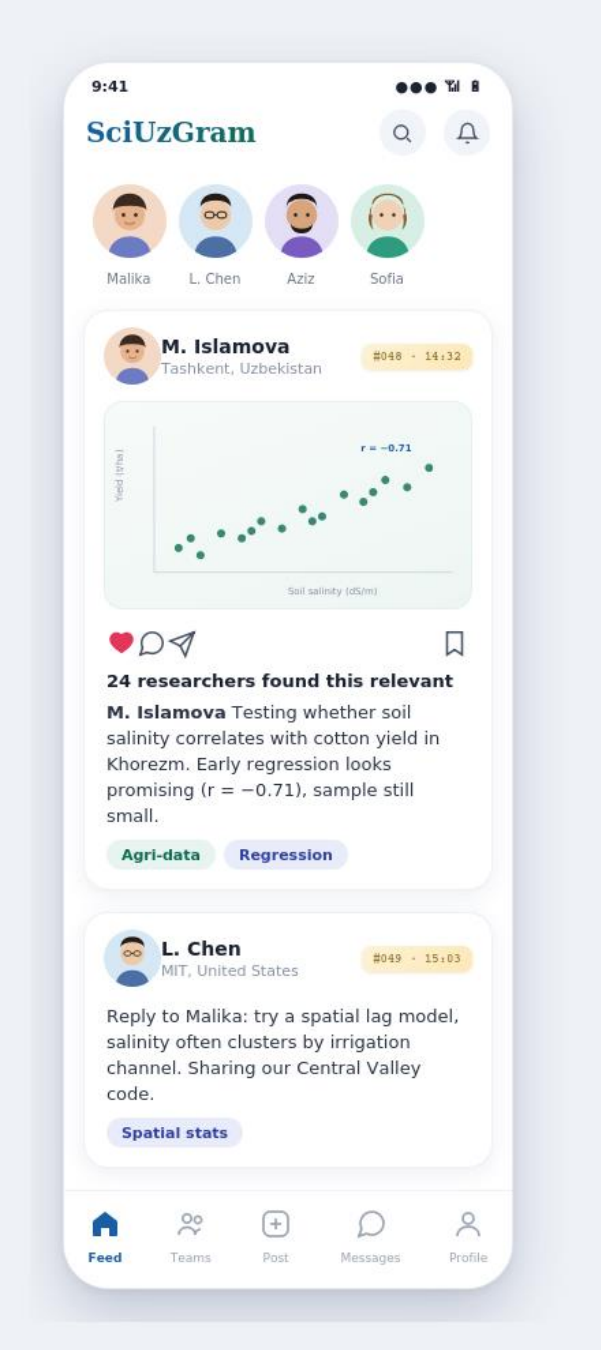

Figure 4. The main feed, with active researchers at the top and dated, tagged updates below.

Opening a post shows the full update with its comment thread, the mechanism through which the fast, informal feedback described in Section 2.2 actually happens, in contrast to the platforms reviewed in Section 4.

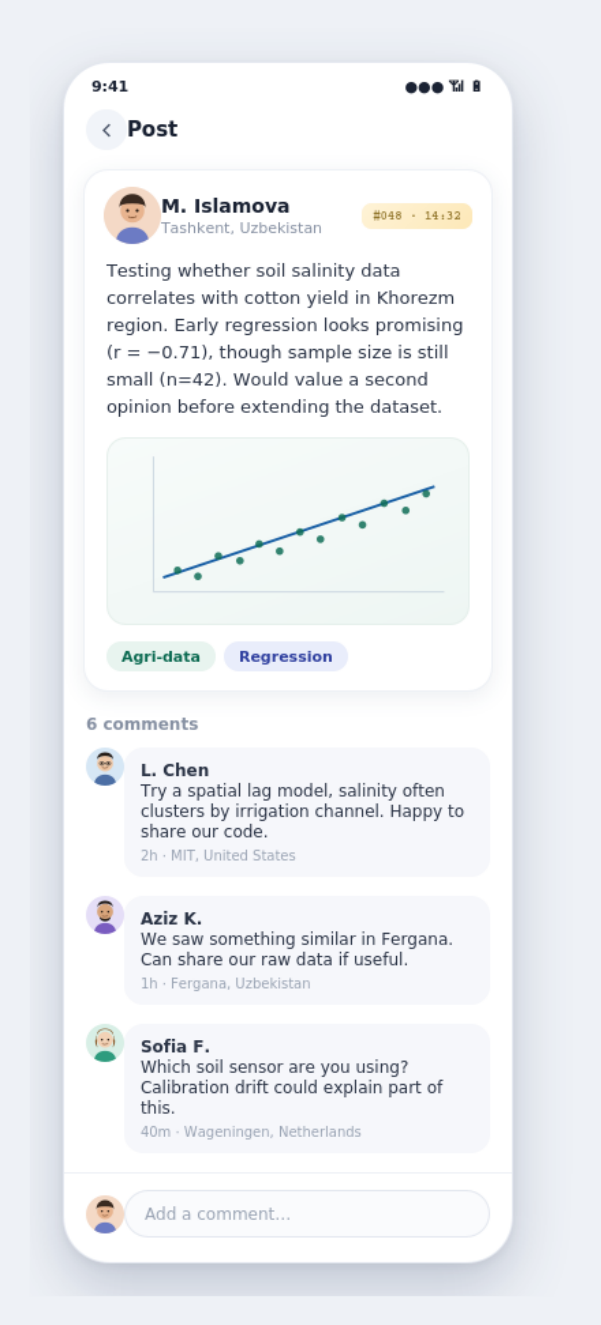

Figure 5. A post opened with its comment thread, the platform's main feedback mechanism.

Publishing an update is deliberately short: a text field, an optional chart or dataset, author-assigned tags, a visibility setting, and a licence choice, the same choice discussed in Section 5.2.

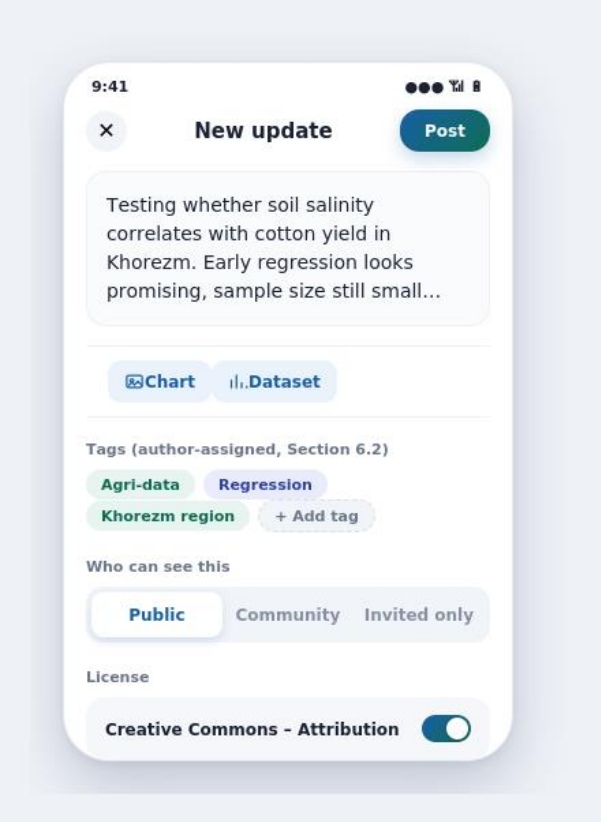

Figure 6. Composing an update, including the visibility and licence controls described in Section 5.2.

The collaborator search screen applies the matching logic from Section 6.2 directly: results are labelled by which tag or topic they match, not by seniority or prestige, and a single tap sends a connection request.

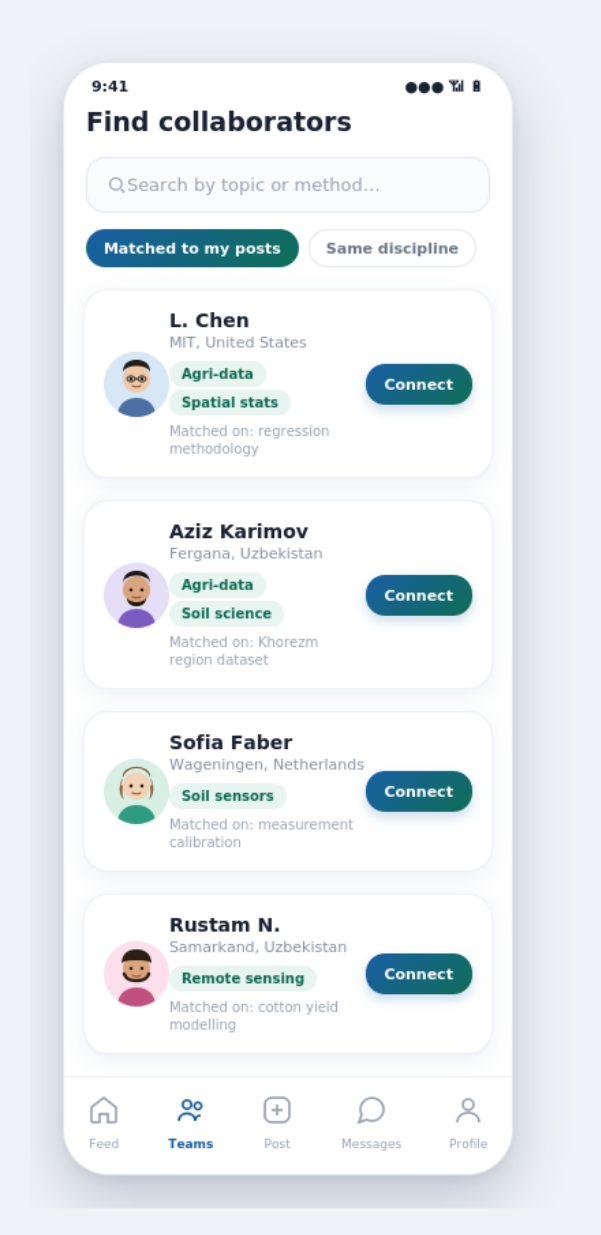

Figure 7. Finding collaborators, with each match labelled by the specific tag or topic it shares with the viewer.

Once connected, researchers can message each other directly, a simple, private channel illustrated here by a conversation continuing from the comment thread in Figure 5, not replacing ordinary messaging once that has happened.

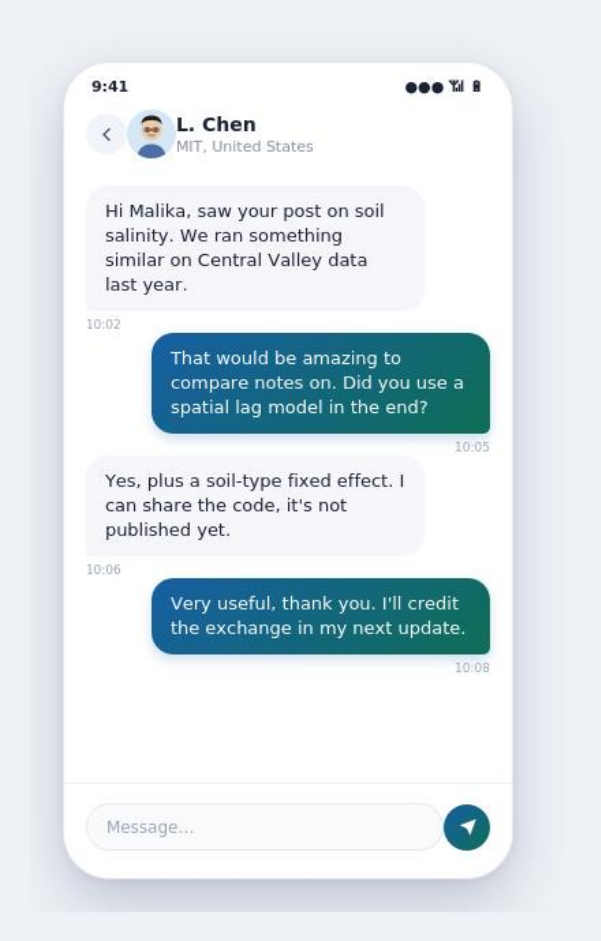

Figure 8. Direct messaging between two researchers who matched through the feed.

A researcher's profile is organised around current entries and active fields of work rather than a static publication list, consistent with the discovery-first design set out in Section 6.1.

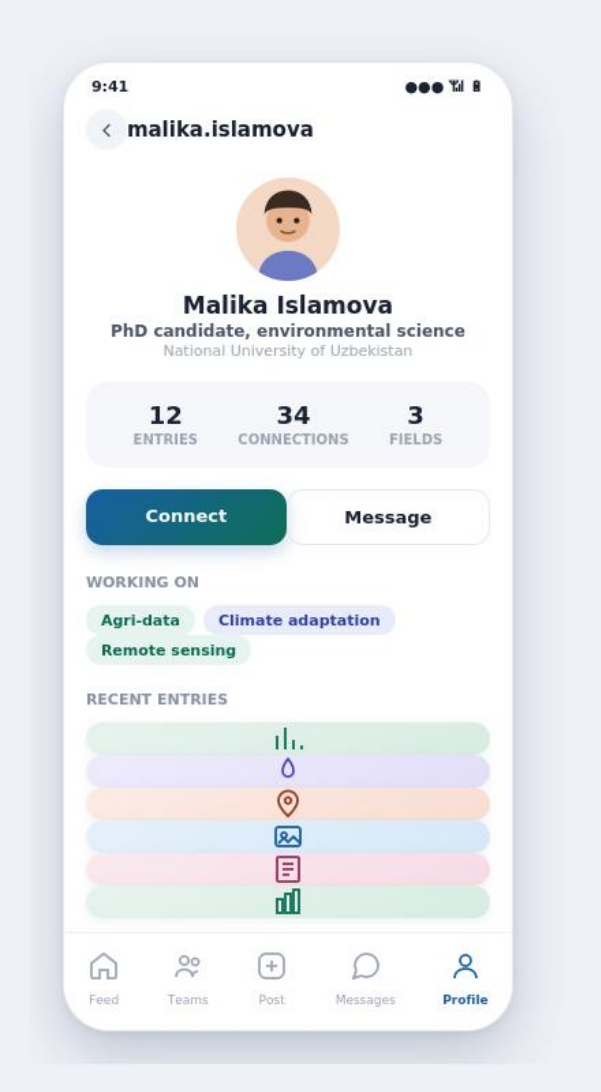

Figure 9. A researcher's profile, organised around current entries rather than a publication list.

Alongside the mobile app, SciUzGram is available as a web platform for laboratory or office use. The web layout adds persistent left-hand navigation and a right-hand panel of suggested collaborators, but the underlying feed, tags, and timestamp badges are identical to the mobile screens, so a researcher's account behaves the same regardless of device.

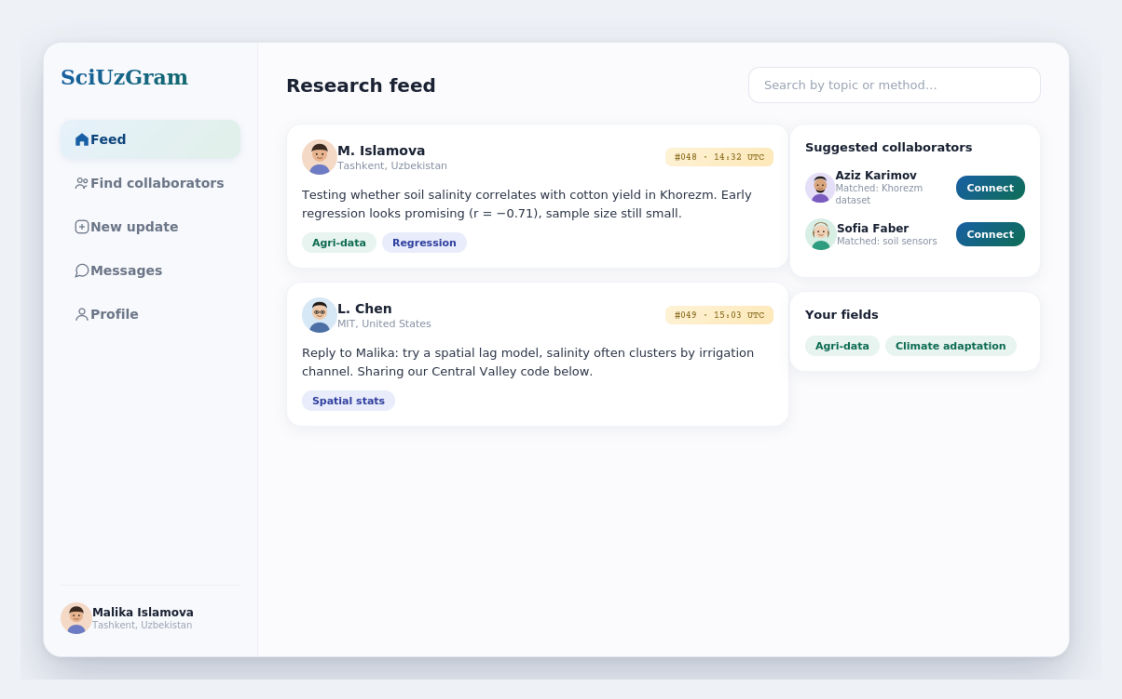

Figure 10. The web version of SciUzGram, showing the same feed and matching logic as the mobile app.

6.4. Feature to problem traceability

Table 8 maps each design feature described in this proposal back to the specific problem or theoretical argument it responds to, to make explicit that no element of the platform was added without a corresponding justification developed earlier in this proposal.

Feature	Addresses	Discussed in
Work-in-progress feed format	Visibility depends on finished credentials, not current work	Sections 2.1, 2.3
Content-based matching (tags and NLP)	Existing platforms match on reputation, not topic	Sections 2.3, 3.4, 6.2
Timestamped priority record	Fear of idea appropriation (scooping)	Sections 3.2, 5.2
Author-chosen licence and visibility	Researchers need control over how openly an idea is shared	Section 5.2
Built-in language support	Time and rejection cost of writing in English	Section 2.4
Mobile-first, low-bandwidth design	Uneven digital access beyond basic connectivity	Section 3.5
Layered data storage (GDPR baseline plus Uzbekistan localisation)	Domestic data protection law for Uzbek citizens	Section 5.4
Narrow, discipline-based pilot launch	Cold start problem in network platforms	Section 3.1

Table 8. Feature to problem traceability.

7. Stakeholder Analysis and Risk Matrix

This chapter identifies the parties whose participation SciUzGram depends on, and sets out the main risks to the project alongside the mitigation already built into its design.

7.1. Stakeholder analysis

Four groups of stakeholders are directly relevant to SciUzGram. Their interests do not always point in the same direction, which is itself a reason to state them explicitly rather than assume alignment.

Stakeholder	Interest in the platform	Engagement strategy
Early-career researchers	Visibility, feedback, and collaborators they currently lack access to (Section 2)	Primary users from launch; recruited through partner university departments in the pilot described in Section 8
Established researchers and mentors	Access to new ideas and collaborators, at low time cost; this is the network's hard side (Section 3.1)	Direct, personal invitations tied to a specific discipline rather than a general call to join, plus visible credit for comments that lead to collaboration
Universities and the Ministry of Higher Education, Science and Innovation of the Republic of Uzbekistan	Concerned with researcher retention and international research output, and with compliance with the data localisation requirement described in Section 5.4	Early consultation on data storage arrangements; anonymised usage statistics offered to participating institutions
International partners and funders	Concerned with the fairness and accountability of the collaborations the platform enables (Section 3.3)	Terms of service and matching design built around the TRUST Code principles from the outset, rather than added afterward

Table 9. Stakeholder analysis.

7.2. Risk matrix

Table 10 sets out four risks judged most significant to SciUzGram's success, together with the mitigation already incorporated into the design described in earlier chapters, rather than mitigation proposed as an afterthought.

Risk	Potential impact	Mitigation
Fear of scooping discourages researchers from posting unpublished ideas	Low-quality or overly cautious content; the platform fails at its core purpose	Timestamped priority record and author-chosen licensing (Section 5.2), modelled on an existing scooping protection precedent in scientific publishing
Established researchers, the network's hard side, do not engage	Feed lacks senior voices; early-career researchers receive no expert feedback	Narrow, discipline-based pilot with direct invitations rather than open recruitment (Sections 3.1, 8)

Risk	Potential impact	Mitigation
Data breach or unauthorised access to personal data	Loss of trust; legal liability under the frameworks described in Section 5.4	Layered data protection model with localised storage for Uzbek citizens and GDPR-aligned baseline rights for all users (Section 5.4)
Insufficient long-term funding once initial support ends	Platform becomes unmaintained; researchers lose the record described in Section 5.2	Narrow pilot scope keeps early costs low (Section 8); institutional hosting arrangements with pilot universities considered as part of the budget in Section 9

Table 10. Risk matrix.

8. Implementation Plan and Timeline

Section 3.1 argued that a network platform should not launch for an entire market at once, but should first establish a small, self-sufficient atomic network. This chapter applies that principle to SciUzGram directly. The pilot targets two disciplines rather than one: law and information technology. This choice follows from the composition of the project team itself, whose members are current students in these two fields at universities in Tashkent. Their existing academic networks provide direct, low-risk access to the first cohort of early-career users and, more importantly, to the established researchers and practitioners who make up the network's hard side, discussed in Sections 3.1 and 7.1. The illustrative case of Malika in Section 2.2 is not specific to this pilot; it represents the general visibility mechanism described in Section 2, which applies across disciplines, including law and information technology.

Implementation proceeds in three phases over 24 months, summarised in Table 11.

Phase	Timeline	Key activities
Phase I: Preparation	Months 1 to 6	Finalise data protection registration in Uzbekistan (Section 5.4); build the platform's core feed, tagging, and timestamp functions (Section 6); recruit an initial group of mentors in law and computer science through the team's own academic networks
Phase II: Pilot deployment	Months 7 to 16	Launch at two partner universities in Tashkent, one with a strong law faculty and one with a strong computer science faculty; onboard early-career researchers directly through department contacts; monitor engagement and act on the risks identified in Section 7.2
Phase III: Expansion	Months 17 to 24	Extend to additional departments and, subject to pilot results, additional disciplines and partner universities in Central Asia; formalise institutional data-hosting arrangements referenced in Section 9

Table 11. Implementation timeline.

Keeping the pilot narrow and discipline-specific is a deliberate constraint, not a limitation to be apologised for. Section 3.1 explained why a broad, unfocused launch is more likely to fail than a narrow one, and Section 7.2 identifies low engagement from established researchers as the most significant risk to the project; starting with two disciplines in which the team already

has direct personal access to potential mentors is the most direct available mitigation for that risk.

9. Budget Overview

The budget below covers Phases I and II described in Section 8, approximately 16 months of preparation and pilot deployment, and is scaled to what a small, discipline-focused pilot in two departments actually requires rather than to a global launch. Table 12 gives the breakdown by category.

Category	Item	Estimated cost (USD)
Platform development and infrastructure	Core application: feed, tagging, and timestamp system (Section 6, 5.2)	4,000
Platform development and infrastructure	Server hosting and database registration in Uzbekistan (Section 5.4)	800
Platform development and infrastructure	Basic NLP matching layer (Section 6.2)	1,500
Human resources and coordination	Part-time pilot coordinator, 16 months	2,400
Human resources and coordination	Honoraria for mentor outreach in law and IT	600
Pilot outreach and promotion	Onboarding sessions at two partner universities	500
Pilot outreach and promotion	Outreach and orientation materials	300
Monitoring and evaluation	Survey design and data collection (Section 10)	600
Monitoring and evaluation	Final report and dissemination	400
Contingency	Approximately 10% of the above	1,100

Table 12. Estimated budget for Phases I and II (16 months).

The total estimated cost of the pilot is approximately USD 12,200. Possible sources of funding include Geneva Challenge prize funds if the project is selected as a finalist, in-kind support from the two partner universities described in Section 8, such as office space and existing IT infrastructure, and university-level innovation grants, which in Uzbekistan are explicitly intended to support the commercialisation of new developments and the wider startup ecosystem under the mandate of the Ministry of Higher Education, Science and Innovation.

10. Monitoring, Evaluation and SDG Alignment

10.1. Evaluation using OECD DAC criteria

SciUzGram's pilot will be evaluated against the five OECD DAC criteria, with a specific, numeric target set for the end of Phase II (month 16) wherever the underlying data can realistically be collected within that timeframe.

Criterion	Evaluation question	Indicator and target by month 16	Data source
Relevance	Does the platform address a real, documented need among researchers in the pilot disciplines?	Qualitative confirmation from user interviews, consistent with the evidence in Section 2	Onboarding surveys, follow-up interviews
Effectiveness	Are early-career researchers gaining visibility and connections they would not otherwise have?	At least 300 registered users across the two partner universities; at least 50 connections initiated between a Uzbekistan-based and an international researcher	Platform usage logs
Efficiency	Is the pilot budget delivering outcomes at a reasonable cost?	No more than approximately USD 40 per registered active user, based on the Phase I to II budget in Section 9	Budget records, usage logs
Impact	What change, if any, has occurred in researchers' access to feedback and collaboration?	At least 5 documented cases in which a connection made on the platform led to a joint output, such as a co-authored paper or a joint grant application	User surveys, follow-up interviews
Sustainability	Can the platform continue operating once initial funding ends?	At least one partner university committing to continued hosting or coordination support beyond month 16	Institutional partnership agreements

Table 13. Evaluation plan using OECD DAC criteria.

10.2. Alignment to Sustainable Development Goals

SciUzGram's design connects to four Sustainable Development Goals, summarised in Table 14 with reference to the specific project elements that support each one.

SDG	Relevant content
SDG 4 – Quality Education	By giving early-career researchers access to informal feedback and mentorship they currently lack (Section 2), the platform supports the practical, ongoing training that formal education alone does not provide.
SDG 9 – Industry, Innovation and Infrastructure	SciUzGram is itself a piece of research infrastructure, addressing a documented gap in the tools available to researchers in Central Asia (Section 4) and building on Uzbekistan's own digital infrastructure and data protection framework (Section 5.4).
SDG 10 – Reduced Inequalities	The platform's content-based matching (Section 6.2) is designed specifically to counteract the visibility gap described in Section 2.1, so that recognition depends on the relevance of a researcher's work rather than on the wealth of their institution.
SDG 17 – Partnerships for the Goals	By supporting collaborations structured around the equitable partnership principles reviewed in Section 3.3, SciUzGram aims to increase the number and quality of genuine international research partnerships involving Central Asian researchers.

Table 14. Alignment to Sustainable Development Goals.

11. Conclusion

Research is work, and like other kinds of work, it is shaped by who has access to the right conversation at the right moment. This proposal has argued that a specific, measurable gap in that access, not a gap in talent or effort, keeps researchers in Central Asia and other developing regions structurally behind the frontier of their own disciplines. Existing platforms were not built to close this gap: they were built to display finished credentials to people who already have an audience, which is a different problem.

SciUzGram responds with a change to the everyday process of research rather than to its content. A feed built around unfinished, dated work, matched by topic rather than reputation, gives a researcher like Malika a realistic chance of being read by the person who can actually help her, regardless of which country she studies in. The platform's legal safeguards, a timestamped priority record and a data protection framework that takes Uzbekistan's own law as seriously as any foreign standard, are not an afterthought attached to a technology idea. They are a direct response to the reasons researchers currently hesitate to share their work at all.

None of this requires a large or risky first step. The pilot proposed in Section 8 begins with two disciplines and two universities in Tashkent, chosen because the project team can reach the first mentors and early-career researchers directly, and grows only once that narrower group has shown the platform works. If it does, the same approach can extend to other disciplines, other universities, and other countries in Central Asia facing the same structural disconnection described in this proposal.

The Geneva Challenge asks what the future of work should look like. For science, this proposal's answer is specific: a future in which a researcher's visibility depends on the question they are asking now, not on the country they happen to be asking it from.

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