

ARCATHON

SWISS AI COMPETITION

WORLD
RECORD
ATTEMPT



REPRESENT
YOUR
INSTITUTION





BREAK AN
AI WORLD
RECORD

SHOW THE
CREATIVITY
OF YOUR
TEAM

STAY ON THE
BALL IN AI

APPLY,
LEARN AND
CREATE

1

2

3

Registration is free to all Swiss-based teams of 2-5 coworkers from the same company; no knowledge of artificial intelligence (AI) is required:

☞ <https://lab42.global/arcathon>

BE PART OF SOMETHING BIG – Switzerland's youngest AI Lab invites you and your colleagues to be part of a world record in Artificial Intelligence (AI) called ARCanthon.

FIND OUT HOW CREATIVE YOUR SMARTEST FOLKS ARE – Learn more about the state of AI, take on a simple task that doesn't yet have a solution, and see where your ideas stand.

KEEP YOUR FINGER ON THE PULSE OF AI – Connect with people in the Swiss AI industry and beyond and learn about the latest developments – The winners will be honored at the annual Swiss AI Awards.

GATHER THE SMARTEST COLLEAGUES working with you in the same company (make sure there is at least one programmer).

NOMINATE A TEAM LEADER

and attend a short briefing session about the state of AI, learn how ARCanthon works and how your team may break a world record in AI.

PRACTICE, HAND IN SOLUTIONS, AND GET FEEDBACK

Get feedback and let your best solution be ranked along a novel intelligence benchmark – winners will be selected by December 10, 2022, and feedback will be given 10 days after solution submission.

AR
CATHON

Team Briefing Participation Terms

ARCathon Team Instruction:
What, Why, How, Who and Terms

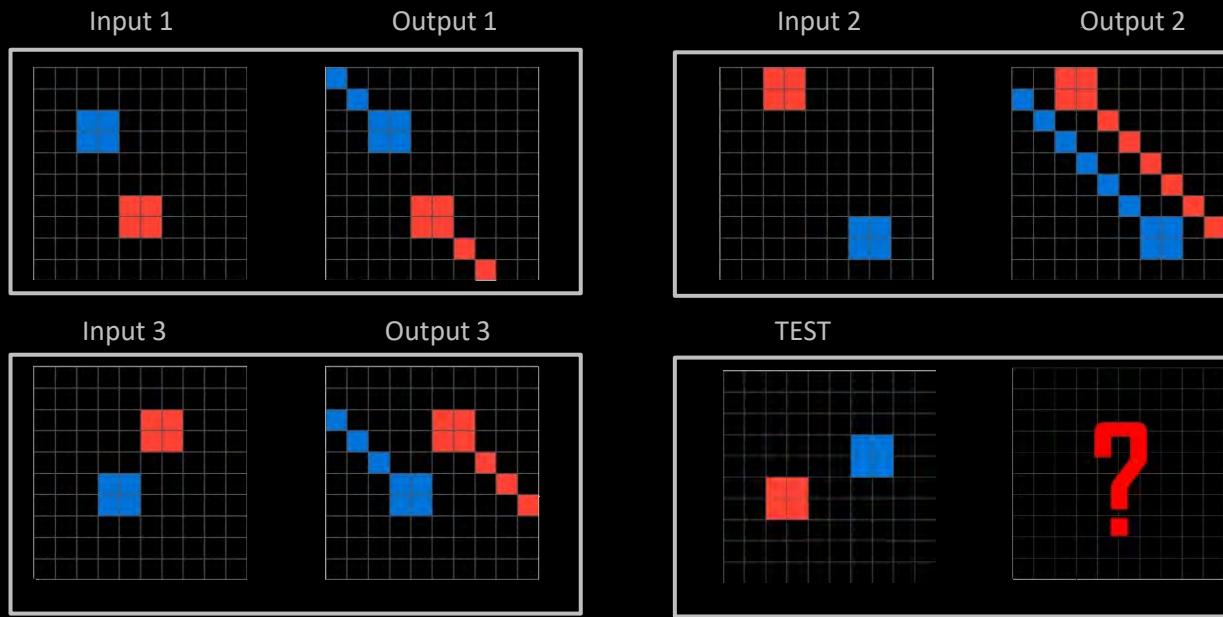
Davos, August 15, 2022

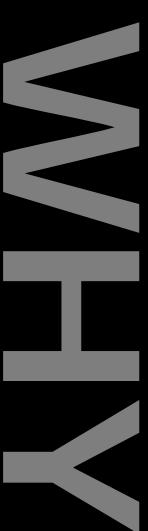


ARCathon is a Switzerland-wide competition between organizations that promotes AI competence, strengthens team spirit, and makes hidden champions visible in top companies.

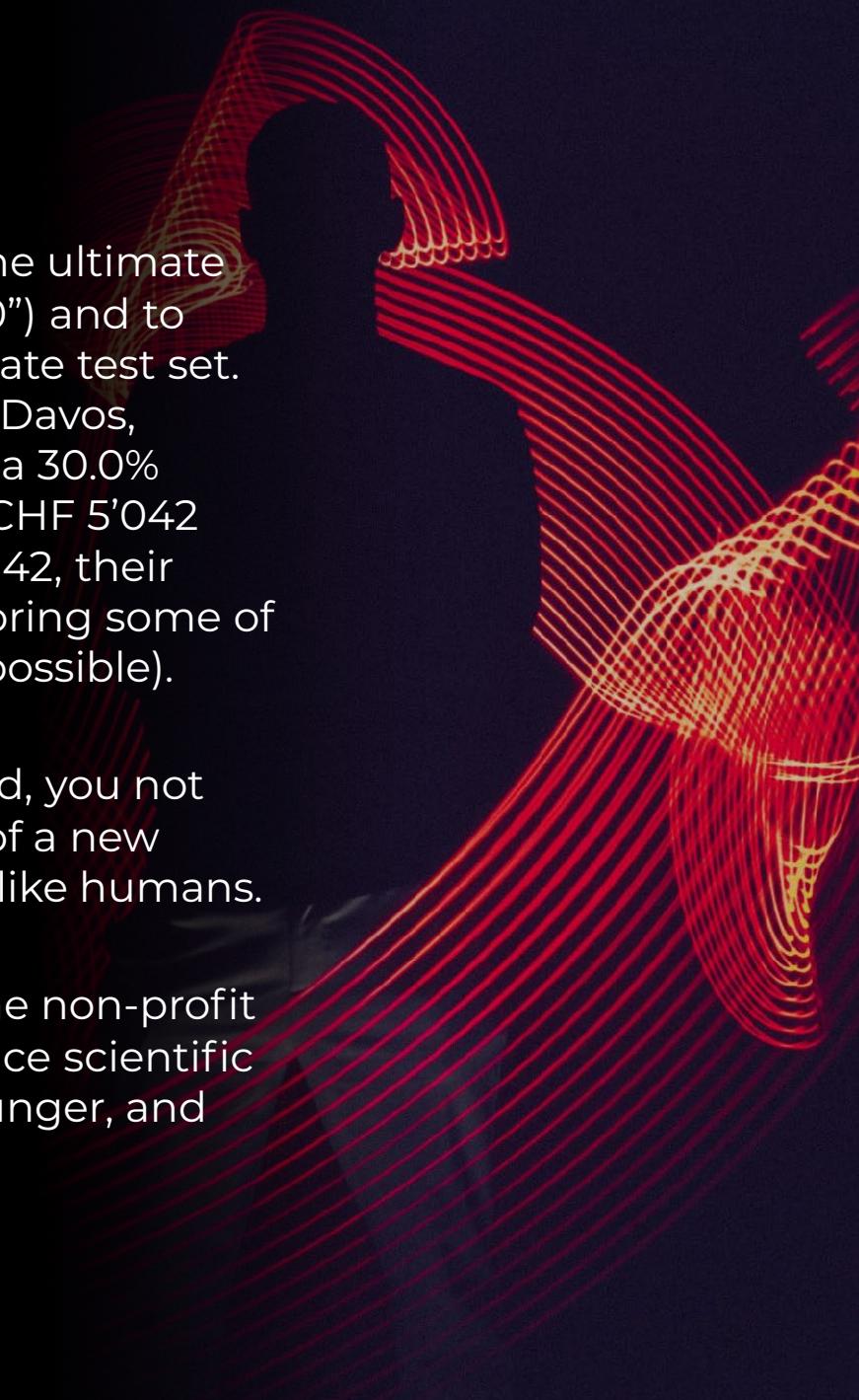
In a team of 2-5 people, you try to outsmart other IT teams in Switzerland while tackling the current world record in AI. In 2019, the ARC Challenge, an IQ test for artificial intelligence, was introduced. With 800 sample tasks, the goal is to program an algorithm capable of solving 100 tasks that are not open to the public. The current world record algorithm solves 30% of the secret set of tasks.

Example ARC Task





Purpose and what's in it for you

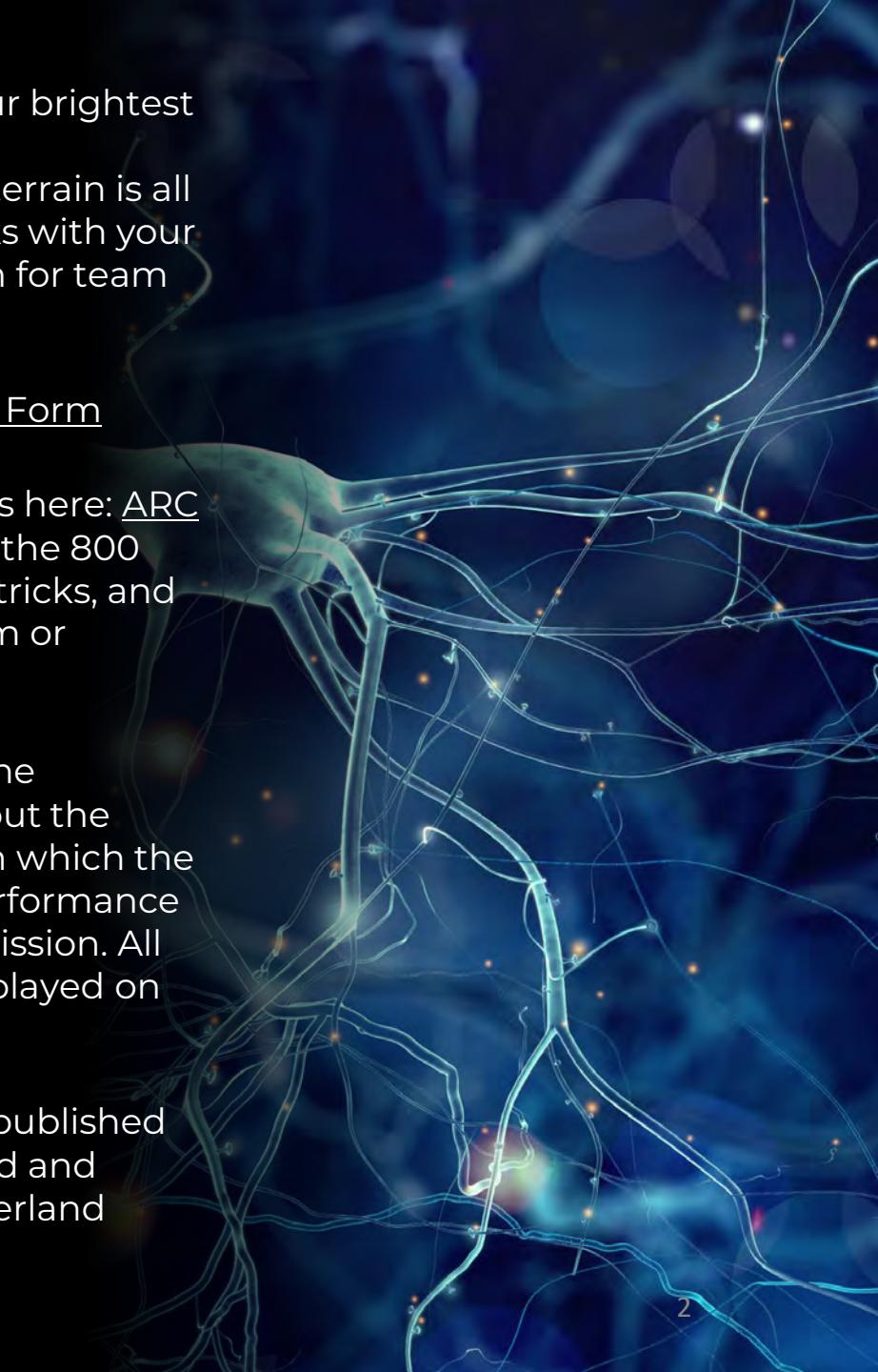


Win a team event budget for you and your colleagues: The ultimate threshold is to exceed both the current world record ("Milestone-30") and to achieve a solution rate of at least 42.0% ("Milestone-42") on the private test set. The best 3 ranked teams are invited to an incredible team event in Davos, expenses covered, as long as they beat the current world record at a 30.0% solution rate. The best team hitting any of the 2 Milestones wins a CHF 5'042 budget to throw an unforgettable party. If teams hit the Milestone-42, their names are forever engraved in stone in the Davos mountains, honoring some of the most creative minds in AI history (anonymous participation is possible).

Take AI to the next level: If you achieve to beat the world record, you not only win a fantastic prize, but you also contribute to the invention of a new generation of algorithms, which are capable of abstract reasoning like humans.

AI for humankind: Lab42 is located in Davos and operated by the non-profit AI foundation Mindfire. Support the Foundation's mission to advance scientific progress in AI research to develop AI that helps us fight disease, hunger, and environmental disasters. Learn more: www.lab42.global.

- 1. Form a team and appoint a team leader:** When you unite your brightest problem solvers, you stand a good chance of doing better than your competitors. So far, no one knows the blueprint to solve ARC, so the terrain is all yours. Show how creative you are as a team and solve more ARC tasks with your algorithm than other organizations in your field. See the rules section for team requirements.
- 2. Register your team:** Register your team online here: [Registration Form](#)
- 3. Do some practice:** Check out the ARC Editor and solve some tasks here: [ARC Playground](#). You can find possible first steps, computation rules, and the 800 training tasks on the Website: [ARCathon](#). For regular updates, tips & tricks, and Q&A sessions, please check the respective box in the registration form or contact arcathon@lab42.global for technical questions
- 4. Create your algorithm and hand it in for scoring:** You find the submission rules & instructions on the Website: [ARCathon](#). Throughout the competition, you can hand in up to 3 versions of your algorithm, from which the best-ranking version will be on the leaderboard. Feedback on the performance with the private test set is usually obtained within 10 days after submission. All communication is done via the team leader. The rankings will be displayed on the public online leaderboard starting September 1, 2022.
- 5. Check the leaderboard and final ranking:** Final rankings are published around December 10, 2022. The 3 best ranking teams will be informed and invited to an award ceremony on December 16, 2022, in Davos, Switzerland (remote participation is possible).



HOW 2/2

Overview: Registration is open from **August 15**, and Submissions are accepted from **September 1 to December 1, 2022**. Practice and Q&A sessions can be requested in the registration form or via arcathon@lab42.global. If you have any questions regarding ARCAthon, contact the ARCAthon email address or find your personal contact on the last slide.

The best three teams are rewarded on the day of the winner announcement, December 16, 2022. If the best team hits Milestone-42, they will be invited to the annual Swiss AI Award, where they are honored by the jury.

	August	September	October	November	December
Timeline	Start Team Registration 15.08.2022	Start Solution Submission 01.09.2022		End Team Registration 20.11.2022	End Solution Submission 01.12.2022
Updates & Scoring		1 st Competition Update 01.09.2022	2 nd Update & Leaderboard 01.10.2022	3 rd Update & Leaderboard 01.11.2022	Evaluation 01.12.2022 – 11.12.2022
Winner Selection					Winners Announcement ~16.12.2022



Meet the Jury



Benjamin
Grewe

Professor in Neural
Systems at ETH and
University of Zurich



François
Chollet

Winner Swiss AI
Award, Senior
Engineer at Google,
Author of Keras



Brigitte
Sommer

Legal attorney, Jury
member of the
Digital Economy
and Swiss AI Award



Thilo
Stadelmann

Professor & Director of
Centre for AI, ZHAW
School of Engineering

Meet the Organizers



Oliver
Schmid

Head Community &
Lead ARCAthon



Hansueli
Jud

Head Technical
Evaluation



Abigail
Becirovic

Community



Simi
Singh

Technical
Evaluation



Pascal
Kaufmann

President Mindfire



Rolf
Pfister

Head Lab42

Legal notice: Each jury member abstains in case of a possible conflict of interest and treats all applications strictly confidential. All intellectual property rights remain with the applicant and are safeguarded by the non-profit Mindfire Foundation. Lab42 is mandated to run the ARCAthon with Francois Chollet as the host of the 2022 ARCAthon competition. All participants agree to the [general terms of use](#), including the respective privacy policies, by confirming that they have read and accepted them. More information can be found here: www.lab42.global/arcathon.

General Terms and Conditions ARCAthon 2022

1. ARCAthon 2022

- 1.1. The new Swiss-wide ARCAthon is organized by the Mindfire Foundation, c/o Sielva Management AG, Gubelstrasse 11, 6300 Zug, Switzerland (CHE- CHE-142.155.301), further referred to as "the organizer". The Mindfire Foundation is a Switzerland-based not-for-profit organization dedicated to further progress in Artificial Intelligence research. Participation in the selection process, competition, or its events is free of charge for all participants.
- 1.2. ARCAthon honors outstanding companies and institutions (together: 'organizations') with ties to Switzerland. It distinguishes the most creative and transdisciplinary teams within those organizations, making hidden champions and expertise in AI visible. ARCAthon challenges participating teams with fundamental questions: How can a new generation of algorithms keep up with human-level intelligence? What does it take to achieve human-like reasoning and abstraction?
- 1.3. During a several months registration and scouting process, the most promising teams in companies and institutions are searched for and invited to ARCAthon. The Award ceremony usually takes place after a 4-6months application and submission process, preferably in December. Applications for the award is possible only upon completing the dedicated registration process via the public website: lab42.global.

2. Patronage and jury

- 2.1. ARCAthon is a competition under the patronage of the Mindfire Foundation, represented by Lab42, domiciled at Obere Strasse 22B, 7270 Davos Platz, or an assigned representative.
- 2.2. The four jury members and the host of ARCAthon 2022 are:

François Chollet
Host and jury member, independent
Pascal Kaufmann

Host, representing the Mindfire Foundation

Prof. Dr. Benjamin Grewe

Jury member, representing the Institute of Neuroinformatics (INI) at ETH Zurich

Prof. Dr. Thilo Stadelmann

Jury member, representing the AI Centre of the ZHAW School of engineering

Brigitte Sommer, Jury member, independent

2.3. Project office is operated via arcathon@lab42.global, Obere Straße 22B, 7270 Davos Platz, Switzerland

3. Eligibility and registration process

- 3.1. Applicants are eligible as individuals who have been confirmed by Lab42 and who comply with the respective policies and terms.
- 3.2. Organizations and their applicants will only be considered for the ARCAthon award if they complete the registration and submission process as part of ARCAthon.
- 3.3. All material and information submitted must (a) describe original work, (b) not contain fabricated or false information. If existing solutions are to be integrated, the references and the corresponding recognition must be explicitly stated.
- 3.4. Further requirements are:

Applicants personally represent their organizations.

In the case of a company, the legal form is an AG (PLC) or GmbH (LLC). Organizations must operate in Switzerland, the headquarters can be located worldwide and outside of Switzerland. In the case of an institution (e.g. research or educational institution, foundation, association), part of the applicants must be contracted by the respective organization.

At least half of the applicants in a team must be employed by the same company as an employee of at least 50% work contract ("50% requirement") or be a member or a student of

the represented organization (students at colleges, gymnasiums, universities are explicitly included). External team members may join a team as long as the 50% requirement is met. The organizer reserves the right to conduct active matchmaking to suggest individual applicants to registered teams. Interested individuals are requested to contact: arcathon@lab42.global.

Residence in Switzerland of at least one member of the team is required.

- 3.6. There are no restrictions in terms of maturity stage, founding date or history of the represented company.
- 3.7. Amendments: The ARCAthon hosts, or jury members may unilaterally amend terms and selection criteria by means of a majority decision that needs be taken in writing (e-mail is sufficient). Participants will be noticed by e-mail in case of substantial amendments.
- 3.8. Submission and selection process: The selection process is structured along 3 stages and coordinated by the organizer.

Stage-1 ("Application stage"): Teams are encouraged to register during a time period starting on August 15, 2022, and ending by November 15, 2022. In case of doubt, the project office will approach applying teams and ask for the latest documentation such as evidence on employment status, domicile, and further details about the participating organizations. Otherwise, teams are confirmed and are cleared for submitting algorithms.

Phase-2 ("Submission Phase"): Teams will be invited to submit their algorithms during a period between September 1, 2022, and December 1, 2022. The ranking of submitted algorithms will be based on the material provided, as well as additional research and conformance testing that may or may not be performed by the assigned judges. The "Submission Rules and Instructions" document, available online at <https://mindfire.opensocial.site/event/arcathon>, is binding, and submissions may be rejected if the submission and computation rules are not followed or are not consistent with them. All applicants are sorted in a ranked list showing

the percentage of correctly solved tasks of the undisclosed "private test set". Ranking is based on a binary decision of whether or not the output was correctly generated by the submitted algorithm. Up to 3 versions of algorithms (executable programs) can be submitted, and the best ranking will be published on the leaderboard with the respective team names. No personal data will be disclosed without the explicit prior consent of the team leader. Feedback on performance on the private test set is usually returned to the team leader within less than 10 days of submission. All communication will be through the registered team leader. Beginning September 1, 2022, and with 5 or more submissions, rankings will be listed on the public leaderboard, which can be accessed at <https://lab42.global/arcathon/>.

Stage-3 ("Winner selection stage"): Final rankings are published on December 10, 2022. The 3 best ranking teams will be informed and invited to the ARCAthon award ceremony taking place on December 17, 2022 in Davos, Switzerland (remote participation is possible). Jury board members are presented the top 10 performing algorithms. The decision on the winner is taken based on the rankings (percentage of correctly solved ARC tasks). In case of dissent or equal ranking, a deliberation and resolution call is taken until the top-3 teams are selected and the winner nominated by majority vote. Minutes shall be taken of this convening of the entire jury.

3.9. Novelty and uniqueness: Algorithms based on ideas that have already been implemented in identical or similar fashion, or that do not differ from an already implemented idea in any significant aspect, may be excluded from consideration by the jury based on a first-to-file basis.

4. The jury decision board and indemnification

4.1 The independent jury (the jury board) constitutes itself. The jury consists of nominated representatives, proven AI experts with sound scientific and research backgrounds, as well as experienced jury members of existing AI or digital economy awards and external ad hoc partners. The jury is chaired and coordinated by one of the jury members, who

is elected by simple majority. For the first edition of ARCAthon 2022, the presidency for the first term will be held by a representative of the Mindfire Foundation. The presidency can be extended by simple majority vote.

4.2 The jury deliberates in closed session. The jury committee reserves the right to refuse to disclose personal information to an individual that is evaluation or opinion material prepared solely for the purpose of determining the individual's eligibility to receive the award.

4.3 All decisions of the jury board regarding the award of the prize are final and binding, without appeal, with respect to all aspects of the ARCAthon, including, but not limited to, eligibility and disqualification of applicants. The prize is subject to applicable federal, state and local law and is void where prohibited by law or regulation.

4.4 The jury board and individual judges will not be liable for incomplete or inaccurate information resulting from technical or human errors in the collection and/or processing of information

the theft, loss, destruction or unauthorized access to, or alteration of, information

any message or email from or to ARCAthon or the Organizing Team not being received and/or for any application not being captured, recorded or received for any reason.

any typographical or other errors in the offer or administration of this award, including but not limited to errors in advertising, these terms and conditions, the selection and/or announcement of the finalists or the winners; and

any combination of the above.

5. Prizes and selection process

5.1 The jury will select three finalists. Rankings are calculated by means of measurement of the solution rates on the private (undisclosed) test set accessible to the Jury. Two milestones are defined: i.) Milestone-30, quantifying a solution

rate of at least 30.0% and ii.) Milestone-42, quantifying a solution rate of at least 42.0%. The best 3 ranked teams that achieved the Milestone-30 are invited to a 2 days team event in Davos, with all expenses paid for accommodation, ski/mountain pass, fun activities, meals, and train tickets, at a date suitable to the respective team. The best team that reaches one of the two milestones wins a budget of CHF 5,042, which is either paid directly to the team leader or divided among the team members. (add VAT stuff). If teams hit the Milestone-42, their names (team or individual names) are engraved in stone on a dedicated spot within or above the city of Davos, Switzerland. Rejection of this engraving due to anonymity is possible. In addition, the first-ranked team will receive a dedicated ARCAthon trophy as well as media coverage in a tier-1 newspaper in Switzerland. The second and third-placed teams will receive a certificate attesting to their top placement and providing a rationale for that placement.

5.2 No deferrals of awards will be allowed. At least one representative of the team must make themselves available to receive the award. Failure to be available will be considered a withdrawal of the application unless special circumstances obtain.

5.3 Participants in the competition are not entitled to compensation for expenses of any kind.

6. Communication

6.1 The ARCAthon competition will be followed by the media. Photos, videos, and contributions to events and the award ceremony will be published in the media and in various channels, such as on the Lab42.global and Mindfire.global websites, newsletter and social media. Participants agree to such publications. The winners of the competition are entitled to mention their successful participation in the ARCAthon in their own communications in the future.

7. Data Protection and liability disclaimer

- 7.1 Participants grant the organizer the right to process their submitted data.
- 7.2 All ARCAthon employees, named representatives, members of the organizing office, mentors, judges, experts at events, advisory board members, and other persons involved in the competition who have access to a confidential participant or business case-related data undertake to maintain confidentiality vis-à-vis the participants by means of a confidentiality declaration.
- 7.3 No participant, team or other data may be published or disclosed without the consent of the participants, except for the information intended for publication, i.e. the team name (which may be an alias).
- 7.4 The team members of the winners selected and confirmed by the ARCAthon jury (the best 3 finalists) grant the organizer the right to record and publish a video about the team and its project.
- 7.5 Participants grant the organizer the right to share their contact details (team name, first name, last name, addresses, phone numbers, email addresses) with any of the jury members and the host for feedback and further communication.
- 7.6 The organizer and the jury members disclaim any liability for damages of any kind, in particular for damages caused by employees or auxiliary persons, in accordance with the provisions of Articles 100 and 101 of the Swiss Code of Obligations.
- 7.7 The organizer and Mindfire Foundation are not liable for the possible misuse of user data by third parties.

8. Ownership in IP and right to publish

- 8.1 Each ARCAthon participant shall retain and have full ownership of his or her know-how and IP and any other IP-rights ("IP"), in each case whether registered or unregistered,

including the right to apply for intellectual property rights and the entitlement as such, namely inventions.

- 8.2 Upon registration as a team participating in any of the Lab42-challenges (namely ARCAthon, ARCAcreate) and accepting the participation terms, each participant grants to the Mindfire Foundation an unlimited, non-exclusive, sub-licensable, transferable, perpetual, irrevocable, royalty free and fully paid up licence to safeguard, publish and further develop any submission and creation.
- 8.3 Mindfire maintains the right to publish and share any results at any given time and in accordance with Mindfire's foundation purpose and regulations. Mindfire treats all Results with the utmost care and respect and seeks whenever and however possible consent of the respective IP owner before any publication.

8. Limitation of Liability

- 8.1 The Organizer reserves the right to cancel, modify or suspend ARCAthon 2022 or any subsequent edition, or to change these conditions without prior notice or obligation, in case of accident, printing, administrative or other error of any kind, or any other reason.
- 8.2 In the event of any inconsistency or contradiction between these Terms and Conditions and any statements or other representations in the ARCAthon Materials, these Terms and Conditions shall prevail and apply to the fullest extent permitted by law. If for any reason, in the sole discretion of the Promoter, an ARCAthon edition cannot proceed as originally contemplated in these Terms and Conditions, or if the administration, security, fairness, integrity or proper conduct of this Contest is disrupted or impaired, including due to tampering, fraud or other causes beyond the control of the Promoter, the Promoter reserves the right to cancel, terminate, modify, amend, extend or suspend the Contest, in whole or in part, at any time and without notice. Subject to applicable law and any necessary regulatory approvals, the Promoter reserves the right to change the dates and/or deadlines specified in these Terms and Conditions without

prior notice, to the extent necessary to verify compliance by applicants with these Terms and Conditions, or due to other problems or circumstances that, in the Promoter's opinion, affect the proper conduct of the Contest as defined in these Terms and Conditions, or for any other reason.

- 8.3 The Promoter reserves the right to exclude from this Contest and any future award programs or other promotions conducted by the Promoter any person who, in its opinion, tampers with the entry process or the operation of ARCAthon or violates these Terms and Conditions on any site, engages in unsportsmanlike or disruptive conduct, or harasses, abuses, threatens, or bullies any other entrant.
- 8.4 Any attempt by an applicant or any other person to undermine the lawful operation of ARCAthon or any ARCAthon-affiliated website or

sub-project is a violation of criminal and civil laws. should such an attempt be made, the host and all affiliated employees and partners reserve the right to seek damages from any such person to the fullest extent permitted by law.

These Terms and Conditions were signed off by the jury and are valid without signature.

CONTACT

Get in touch



Oliver
Schmid

Head
Community

Your contact:



oliver.schmid@lab42.global

For general questions about the competition:



arcathon@lab42.global