

enabling new business

+ SWITZERLAND
GLOBAL
ENTERPRISE

THE FUTURE OF DIGITAL WORLDS: Artificial Intelligence (AI)

KEY FIGURES



1st

place –
Global Innovation
Index (WIPO)



1st

place –
Global Talent
Competitiveness Index
(INSEAD)



3rd

place –
AI intensity relative to the size
of a country's population



1st

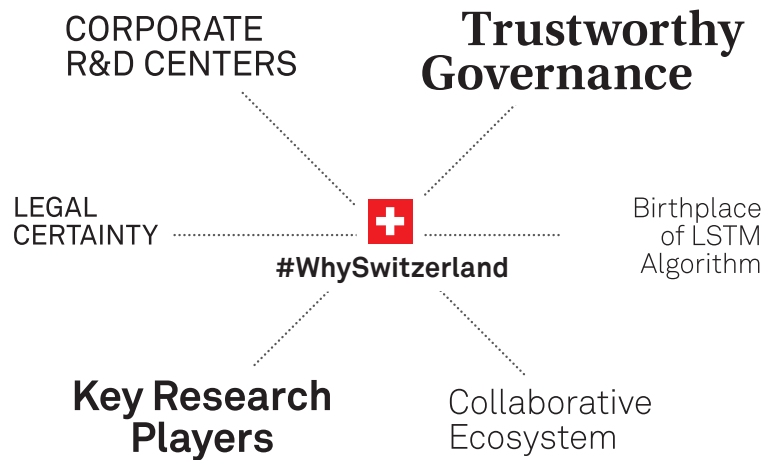
place –
patent applications
per million inhabitants (EPO)

Sources: WIPO, 2023; INSEAD, 2023; Tortoise Media, 2023; EPO, 2023

INTRODUCTION

Switzerland is home to world-renowned universities and research institutes in the area of AI, such as the two federal institutes of technology ETH Zurich and EPFL in Lausanne, IDSIA in Lugano, IDIAP in Martigny, and many cantonal universities. This proximity to cutting-edge research is one important reason why multinational tech leaders such as Google, IBM, and Microsoft conduct their AI research from here. Thanks to its traditional strength in the field of life sciences, Switzerland also drives AI developments in healthcare and pharma. There is a collaborative tech ecosystem in place that fuels partnering opportunities and a high level of innovative output.

Switzerland provides a very stable political and economic environment that offers globally active companies a safe place to host and validate their main assets: data. Trustworthy governance and legal certainty lead to reduced risks for companies, which benefit from an unbureaucratic support from cantons and the government.



OFFICIAL PROGRAM



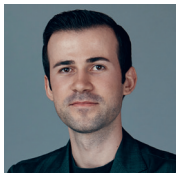
THE ADVANTAGES OF SWITZERLAND

1. Strong Research and Efficient Technology Transfer

Switzerland is home to many **leading AI research institutes** spread out over a manageable geographical area. This closely-knit network and a **pragmatic collaboration between key research institutes and strong industrial players** results in the highly efficient transfer of technology, which brings innovative products to the market quickly.

Why Switzerland:

- The Swiss Federal Institutes of Technology in Zurich and Lausanne (**ETH Zurich** and **EPFL**) rank among **the world's best technological universities**. Their IT departments and established AI labs (such as the ETH AI Center or the EPFL Center for Intelligent Systems) are renowned research labs for both Swiss and international AI research.
- The Dalle Molle Institute for Artificial Intelligence (**IDSIA**), based in Lugano, Canton of Ticino, was founded in 1988. It has gained international recognition for the invention and development of **long short-term memory (LSTM)** in the 1990s, an algorithm that is used by Google, Meta, and Apple for speech recognition. IDSIA is also where the key scientists and technologies of **DeepMind** emanate from, an AI company acquired by Google for 500 million US dollars just four years after its formation.
- The independent **Idiap Research Institute** based in Martigny, Canton of Valais, has been active in AI since 1991. Idiap is famous for inventing the Torch library, that is renowned today as **PyTorch**, the most used machine learning library.
- The Center for Artificial Intelligence in Medicine (**CAIM**) in Bern is a research, teaching, and translation platform for medical technology that uses AI to facilitate the work of doctors and nurses and to deliver better care to patients. CAIM capitalizes on the unique constellation in Bern that joins players from the scientific, healthcare, and industry domains. It promotes and expands projects dedicated to the potential of AI technology for healthcare.



“Here we found a favorable operating environment and a profound pool of talent. We received great support with all administrative procedures, including finding office premises and facilitating introductions to relevant academic and R&D institutions [...].”

ULJAN SHARKA
Founder and CEO iGenius, Martigny

- Other AI-relevant research institutes are the Swiss Center for Electronics and Microtechnology (CSEM), the CAI Center for Artificial Intelligence at Zurich University of Applied Sciences, the Lucerne University of Applied Sciences and Arts, Fondation Botnar, the Paul Scherrer Institute (PSI), the Swiss Institute of Bioinformatics (SIB), as well as the Universities of Basel, St. Gallen, Neuchâtel, Geneva, and Zurich.
- Home to top global pharmaceutical players such as Roche and Novartis, Basel's thriving ecosystem of big pharma and life sciences is driving global AI developments in healthcare forward. Basel is also the host city of **“Intelligent Health AI,”** the world's leading AI in medicine summit series.
- Switzerland has a **high level of innovation output**; in proportion to its population, Switzerland boasts the **highest number of European AI patents** in an international comparison. Thanks to its traditional strength in life science industries, Switzerland scores particularly well with AI patents in the healthcare sector.
- For the past 13 years, Switzerland has ranked at the **top of the Global Innovation Index** (WIPO). According to the corresponding report, the country is **most effective in transforming innovation investment into results**. In addition to substantial investment in research and development, Switzerland's consistently strong position is due to the high quality of local universities and extensive human resources.

A PREFERRED R&D LOCATION FOR GLOBAL TECH COMPANIES

The proximity to cutting-edge research has prompted a substantial number of global tech companies to conduct their AI research from Switzerland.

- **Google** has one of the world's most important research operations in Zurich and tackles AI solutions through its team that is based here.
- The **IBM** Research Lab in the Canton of Zurich works intensively on AI. It was founded in 1956 as the IT company's first lab outside of the United States and is now one of twelve global research labs.
- In 2019, the Basel-based pharmaceutical company Novartis established the **Novartis AI Innovation Lab** with Microsoft as a strategic partner. In Switzerland, the lab is located at the Novartis Campus, Basel.
- Other multinational companies that conduct extensive AI research from Switzerland include Apple, Disney, Sony, Meta, Huawei, Magic Leap, and Microsoft.

2. Data Safety in a Reliable Environment








Switzerland is a location of contrast, standing for emerging technology as well as traditional values such as **trust and safety**. Its political and economic environment offers globally active companies a **safe place to host and validate their data**. The combination of high data security and data quality, political stability, and legal certainty leads to **reduced risks** for companies.

Why Switzerland:

- Switzerland provides a regulatory framework that is innovation-friendly and progressive. Authorities are pragmatic and accessible, also on a cantonal level. Contrary to many other countries, Swiss laws are designed in a technology-neutral way. Regulations are clear and transparent, allowing AI companies to operate with **high legal certainty**.
- The Swiss legal system, being both stable and business-friendly, offers both **significant protection for intellectual property** and a high degree of investment security for R&D activities.
- Switzerland has turned itself into a **center for storage of sensitive data**. It provides a large number of data centers with excellent server infrastructure, rapid internet connections, a stable and cost-effective power supply, as well as highly qualified technicians to operate them.
- Geneva has become a recognized center of excellence in the field of internet governance and has taken on a **leading role in shaping an ethical and globally accepted standardization framework for AI**. It is here, for example, that the AI for Good Global Summit takes place, a United Nations platform, organized by the Geneva-based International Telecommunication Union (ITU), that aims to use AI in order to tackle global challenges.

Top 10 Countries in AI Intensity

The Global AI Index: AI capacity relative to the country's population or economy

Country	Rank
 Singapore	1
 Israel	2
 Switzerland	3
 Finland	4
 United States	5
 South Korea	6
 Canada	7
 Netherlands	8
 Luxembourg	9
 United Kingdom	10

Source: Tortoise Media, 2023

3. A Collaborative Tech Ecosystem











Switzerland has a flourishing **technology ecosystem** comprising established companies, startups, leading research, an experienced talent pool, and a pragmatic regulatory framework. The high density of international headquarters and NGOs helps AI companies to find clients and collaboration partners easily.

Why Switzerland:

- Companies in Switzerland can draw on a large and diverse pool of **highly qualified personnel** with an affinity for new technologies. Not only do the country's top AI research institutes offer a steady stream of new talent, but its high quality of life and excellent working conditions also make it very attractive in terms of gaining and retaining international talent.
- With its high **density of leading AI research institutes**, Switzerland has attracted many global tech companies which have decided to conduct their AI research from here. Their presence nurtures a dynamic AI cluster with strong innovative output and an experienced talent pool.
- Switzerland has very **strong industry clusters in pharma, finance, and health tech**, which are fueling the AI ecosystem significantly.
- Switzerland borders large markets like France, Germany, and Italy, which gives companies easy access to **reach potential customers**.
- The Swiss Artificial Intelligence Research Overview Platform – **SAIROP** – went live in June 2022. SAIROP is an initiative involving numerous partners connecting individuals from stakeholder groups such as academia, administration, and other organizations. Its main goal is to foster collaborations across disciplines and institutions in the field of AI in Switzerland.
- Zurich is considered a **global hub for the metaverse**. But an AI hub was also established in Central Switzerland in 2022. **LAC²** aims to promote access to artificial intelligence in this region.

Top 10 Countries in AI Research

The Global AI Index

Country	Rank
 USA	1
 China	2
 Singapore	3
 Switzerland	4
 United Kingdom	5
 Australia	6
 Canada	7
 Germany	8
 Finland	9
 Netherlands	10

Source: Tortoise Media, 2023

Case Studies

- IT company **Acronis** is a global leader in AI-based back-up software and recovery. In 2008, it established its headquarters in Schaffhausen to benefit from access to the European market, the presence of global tech and business centers nearby, and political and economic stability.
- The startup **Sophia Genetics**, based in the Canton of Vaud, was founded in 2011 as an EPFL spin-off. Through its AI platform it established the world's largest data-driven medicine community network and now serves about 750 institutions in over 70 countries.
- When Sony AI was established in April 2020 as a wholly owned subsidiary of Sony Group Corporation, **Sony AI Zurich** was among the first offices and labs set up. Sony AI aims to accelerate the fundamental research and development of AI and enhance human imagination and creativity, particularly in the realm of entertainment.
- In 2017, Switzerland-based **ABB** entered a strategic partnership with **IBM** to develop industrial AI solutions. The partnership brings together ABB's digital offering, ABB Ability, and IBM's supercomputer **Watson**, in a bid to develop solutions in industry, transport, infrastructure, and utilities.
- The Swiss software company **holo|one** developed "sphere" – a Unified Augmented Reality Software offering out-of-the-box XR functionality for all major enterprise use cases to tackle challenges across various verticals in a single, unified solution. The features and versatility of sphere makes it the most universally applicable solution available on the market supporting all common mixed reality devices.
- Florida-based **Neurodata Lab** is an Emotion AI Hub and full-range R&D laboratory in emotion and social behavior recognition technologies. Since 2018, the company also operates from Lucerne, Switzerland, where it first attracted attention when its software analyzed emotions of Swiss politicians shortly before the elections.
- The **AI Institute** opened an office in Zurich in early 2024. The Institute is focused on solving the most important problems in artificial intelligence related to robotics, with the goal of achieving fundamental advances in the engineering and science of robotics and other intelligent machines. The Zurich team is expanding the Institute's focus in core areas such as AI, hardware design, machine learning, dexterous mobile manipulation, and robot ethics.

CONTACTS AND FURTHER INFORMATION

Authorities and Regulators

State Secretariat for Education,
Research and Innovation SERI
sbfi.admin.ch

Innosuisse –
Swiss Innovation Agency
innosuisse.ch

Associations and Networks

aiforgood.itu.int
c4dt.epfl.org
data-service-alliance.ch
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Innovation and Startup Promotion

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venturekick.ch
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verve.ch

S-GE Resources

[The Future of Digital Worlds
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