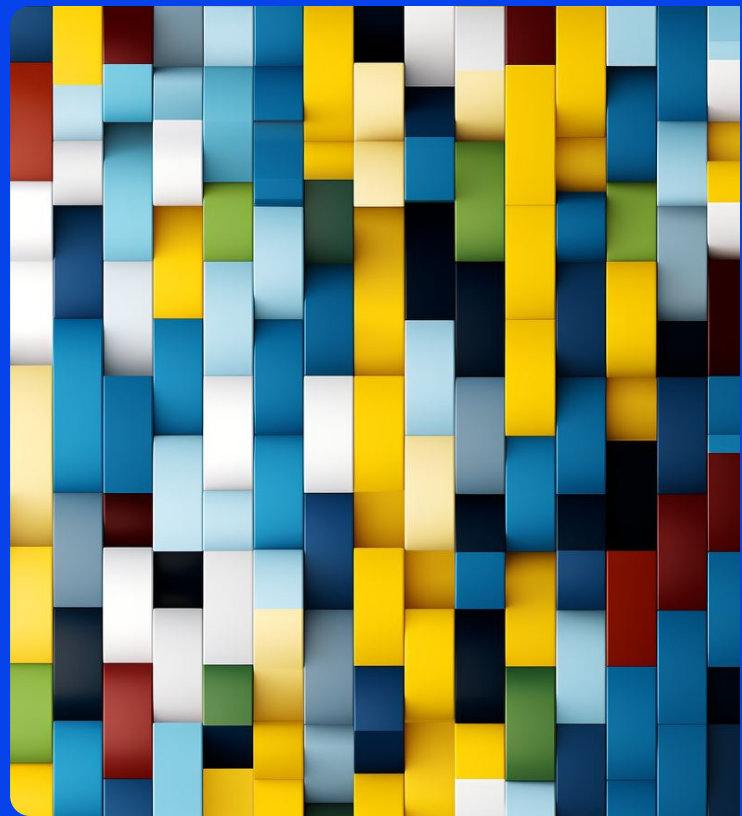




Baltic Deep Tech Report 2023

September 2023





Since 2019 an overwhelming majority of our investments have been channeled into the Baltic region's burgeoning Deeptech and AI sectors.

This decision is rooted in our firm belief that Deeptech represents the true mission of venture capital – a vehicle for fostering innovation that leads to breakthroughs with profound implications for human social and economic freedoms.

In the Baltics, also known as the New Nordics we are captivated by the convergence of science and applications in photonics, robotics, AI and other breakthrough fields as it promises to unlock unprecedented potential across various industries.

We are favoured to be the region leading the number of STEM students per capita in Europe, an engine that will torque innovation for years to come.

At Iron Wolf we aim to support and accelerate the growth of startups and innovators who are pushing the boundaries of what is possible.

We see this as an opportunity not only to generate strong returns for our investors but also to be part of a transformative force that positively impacts society and empowers individuals and businesses alike.

Kasparas Jurgelionis

Managing Partner
at **Iron Wolf Capital**



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Special thanks to our contributors



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Partner at **Wallless**



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Manager at **Google Cloud**



Seed stage VC fund from the Baltics.

Iron Wolf Capital is a leading early-stage VC fund backing exceptional founders building disruptive and global deep tech businesses.

With more than 20 investments over the last 4 years we are one of the most active investors in the Baltics and beyond.

Iron Wolf Capital manages EUR 21 million VC fund that was established under the framework of the financial instrument Venture Capital Fund II managed by Invega and financed from the European Regional Development Fund (ERDF).



Global startup & venture capital intelligence platform.

Dealroom.co is the foremost data provider on startup, early-stage and growth company ecosystems in Europe and around the globe.

Founded in Amsterdam in 2013, we now work with many of the world's most prominent investors, entrepreneurs and government organizations to provide transparency, analysis and insights on venture capital activity.



National startup ecosystem facilitator.

By building bridges between different ecosystem players, Startup Lithuania aims to help current and potential Lithuanian startup founders to start, grow and scale their businesses.

We organize workshops and acceleration programs, give consultations, offer different support schemes for startups, present our ecosystem abroad and organize the main international startups event in Lithuania – Startup Fair. Startup Lithuania is a part of official public agency – Innovation Agency Lithuania – Lithuania’s business competitiveness partner in a global world.



High-performance infrastructure for cloud computing.

Google Cloud, a dynamic and trailblazing division of Google, stands at the forefront of innovation in cloud computing.

As a premier provider of cloud solutions, we empower businesses, developers, and enterprises to harness the full potential of modern technology.

With an expansive array of tools encompassing data analytics, artificial intelligence, machine learning, and more, we enable organizations to seamlessly migrate, manage, and optimize their operations in the digital realm.



A modern Baltic law firm with a wall-less attitude.

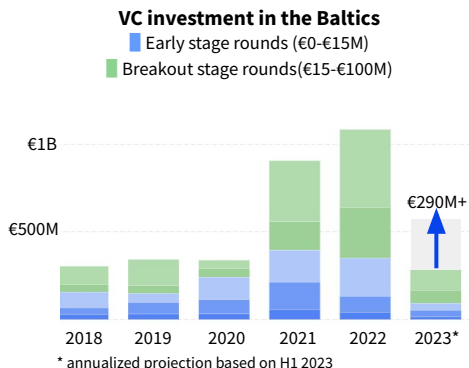
We are committed to providing our clients with the highest level of service, transparency, and professionalism, as well as diversity and inclusion. We come with a mindset of a full scope legal service with large teams across all business law areas.

This makes us well-versed in local and international regulations, and well-suited to assist clients with a variety of matters. Tech start-ups particularly require deep understanding of the emerging complexities of large language models and visual AI across biotech and other industries. We ensure that these ventures get all the support they need throughout the lifecycle of their business.

Key takeaways

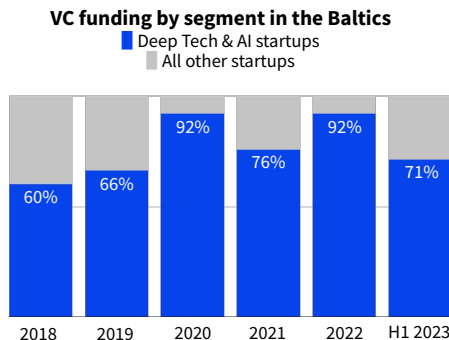
VC investment has reached new heights, and continues to grow at early and breakout stage.

Baltic startups raised over €4B in 2021 and 2022, more than all previous years combined. Since H2 2022 and amidst a more conservative investment environment, Baltic startups have raised over €800M at early and breakout stage.



Deeptech and AI startups are taking center stage in the Baltics.

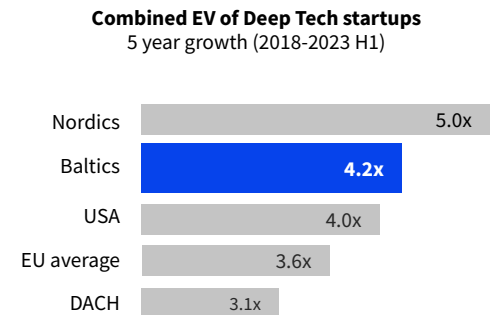
Deep Tech startups have raised a combined €700M over the past five years, i.e. 10% of the total volume of VC investment in the region. In 2023 so far, Deep Tech startups raised over a quarter (€94M) of all VC investment deployed in the region. In combination with AI-powered startups, this growing ecosystem of R&D-intensive, innovative companies is capturing a growing proportion and amount of investment from local and international investors alike.



The Baltics Deep Tech sector is one of the fastest growing in Europe.

The combined enterprise value of Deep Tech startups in the Baltics has more than quadrupled since 2018, outpacing that of many leading regions globally.

As part of a comparatively smaller ecosystem, Baltic startups are able to grow fast and leave a mark on the broader startup ecosystem, driving innovation not just domestically but also with a global impact, showcasing their prowess in deep tech innovation.

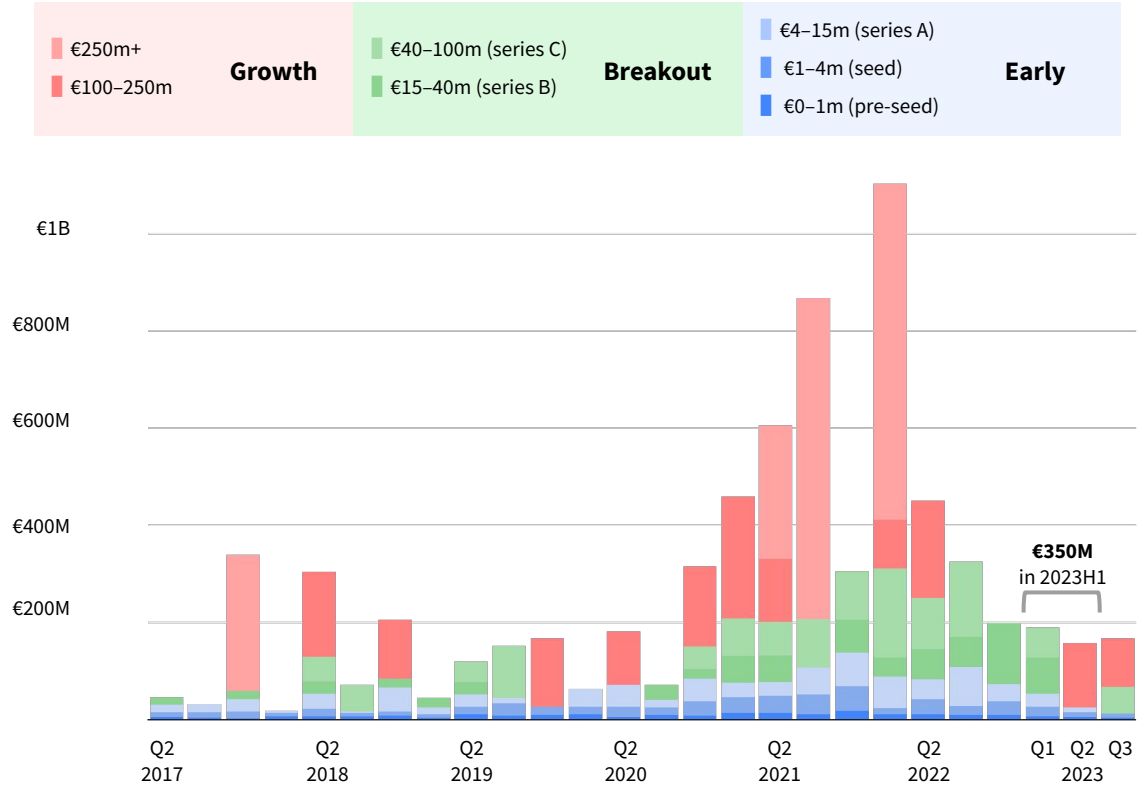


1. Baltic Funding Update.

Baltic startups have raised €516M so far in 2023, amidst a significant uptick in activity across the region over the past 5 years.

In the past 18 months, there have been over 400 funding rounds across the Baltics. VC investment now routinely exceeds \$100M per quarter, driven not just by Megarounds, but also by a growing pool of VC-backed startups.

VC investment, Baltic startups [» view online](#)



The Baltic ecosystem boasts a strong pipeline of promising Deep Tech, AI & impact startups.



Selected top rounds in the Baltics

Startup	Round	Location & date
Bolt	€690M Series F	Tallinn, Jan 2022
PVcase	€100M Early VC	Kaunas, July 2023
NORD SECURITY	€100M Late VC	Vilnius, Apr 2022
veriff	€100M Series C	Tallinn, Jan 2022
kevin.	€65M Series A	Vilnius, May 2022
lokalise	€57M Late VC	Riga,(founded) May 2022

[View more »](#)

Selected top Deep tech rounds

Startup	Round	Location & date
SKELE+ON TECHNOLOGIES	€55M Convertible	Tallinn, July 2023
STARSHIP	€42M Late VC	Tallinn(founded) Mar 2022
AERONES	€38.9M Late VC	Riga, Dec 2022
READY PLAYER ME	€13M Series A	Tallinn(founded) Mar 2022
CYBEREX TECHNOLOGIES	€5M Early VC	Tallinn, Feb 2022
libilib	€5M Early VC	Vilnius, Nov 2022

[View more »](#)



Selected top AI-powered startups rounds

Startup	Round	Location & date
veriff	€100M Series C	Tallinn, Jan 2022
kevin.	€65M Series A	Vilnius, May 2022
READY PLAYER ME	€56M Series B	Tallinn, Aug 2022
glia	€45M Series D	Tallinn, Mar 2022
eurora	€40M Series A	Tallinn, Apr 2022
PACTUM	€20M Early VC	Estonia, Dec 2022

[View more »](#)



Selected Impact & climate tech rounds

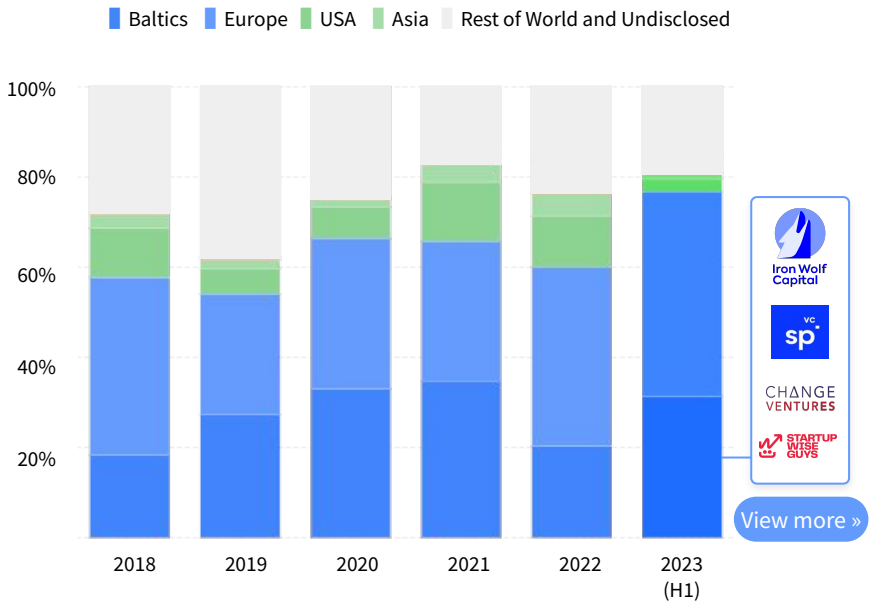
Startup	Round	Location & date
PVcase	€100M Early VC	Kaunas, July 2023
AERONES	€38.9M Late VC	Riga, Dec 2022
SOLARSTONE	€11M Series A	Tartu, July 2022
eAgronom	€12.9M Series A	Tartu, Jun 2023
ELINTA CHARGE	€7.0M Early VC	Kaunas, July 2022
VOK	€3.8M Seed	Tallinn, Jun 2023

[View more »](#)

Early stage startups, primarily funded by local investors, are in demand for global backers to reach the next phase of success.

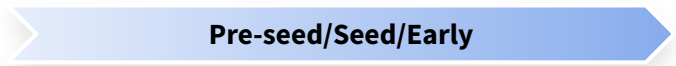
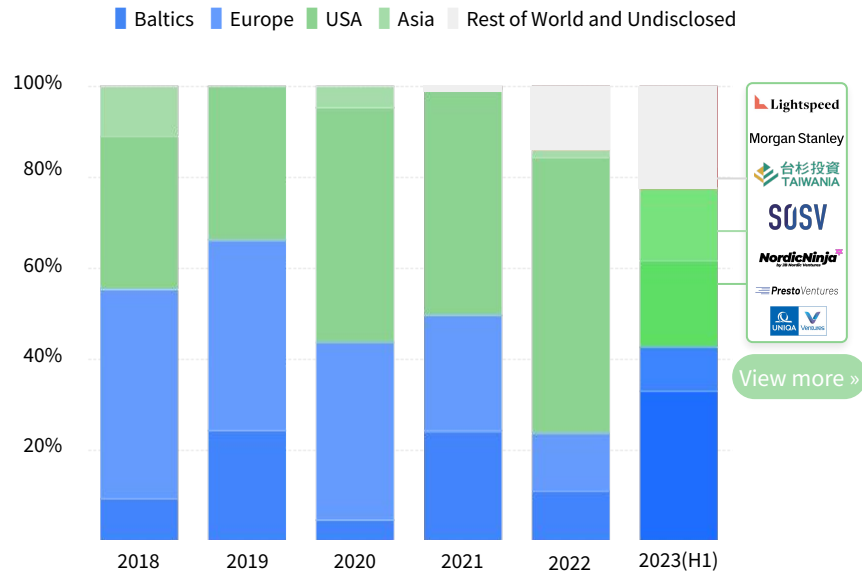
Early stage VC funding by investor location (€0-€40M)

[» view online](#)



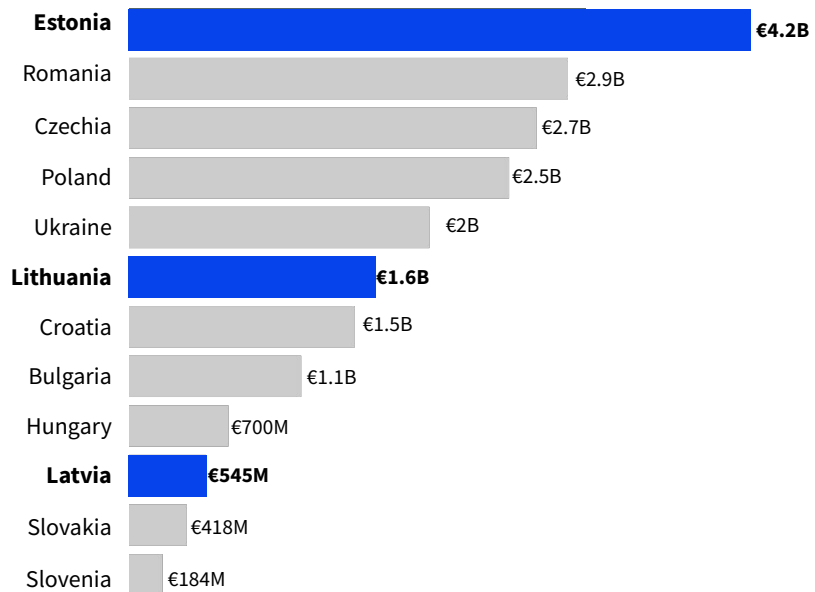
Late stage VC funding by investor location (€40M+)

[» view online](#)



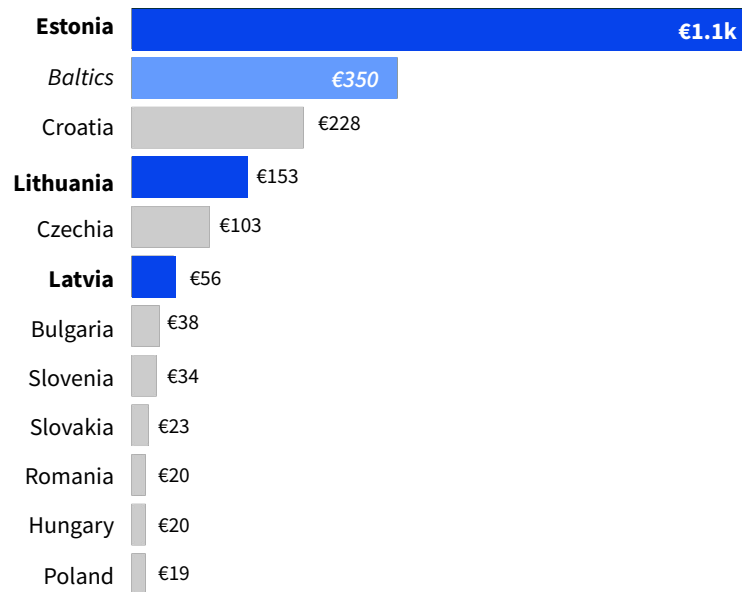
Baltic countries rank in the upper quartile for VC investment on a cumulative and per capita basis among CEE countries.

Cumulative VC investment since 2018



Density of VC activity per country

VC investment deployed in country in 2022, per capita



Transportation, Food and Fintech startups raised the most VC funding in recent years.

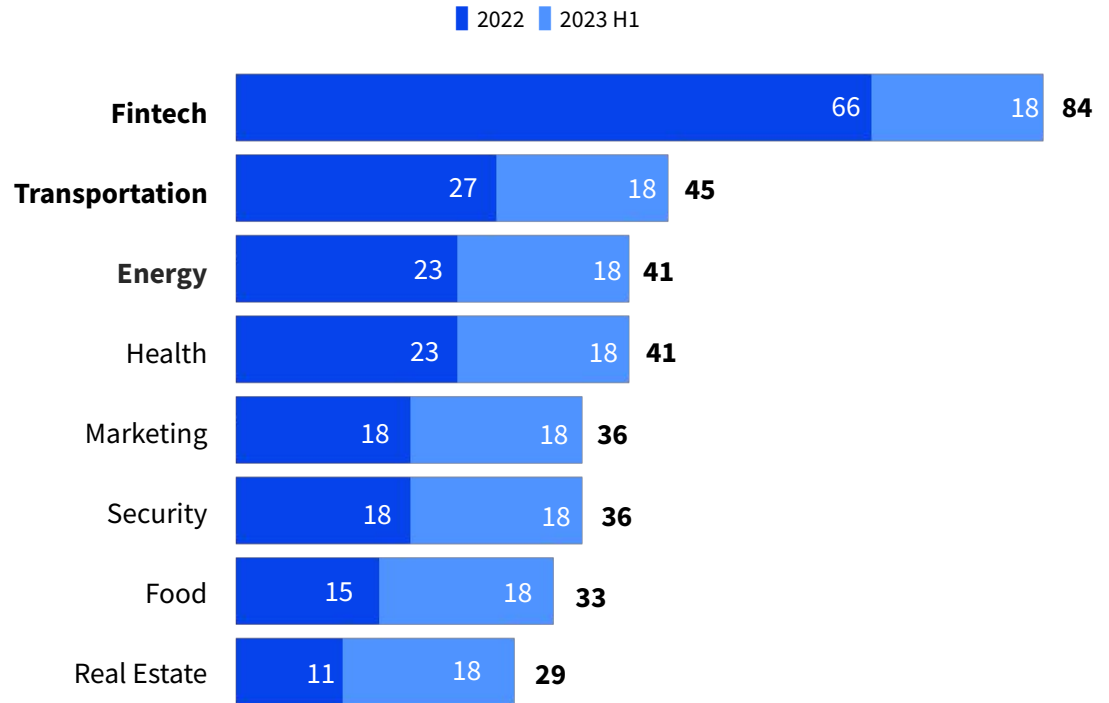
In 2023 H1, Energy startups are raising record levels of capital, thanks to PVCASE's megaround in July 2022.

VC Investment into Baltic startups across industries [» view online](#)

	2018	2019	2020	2021	2022	2023 (H1)
Transportation	\$326M	\$118M	\$331M	\$768M	\$815M	\$78M
Food	\$195M	\$72M	\$283M	\$687M	\$711M	\$10M
Fintech	\$59M	\$90M	\$124M	\$468M	\$672M	\$47M
Security	\$17M	\$6M	\$60M	\$184M	\$223M	\$160M
Energy	\$7M	\$12M	\$54M	\$84M	\$125M	\$171M
Gaming	\$10M	\$22M	\$12M	\$34M	\$136M	\$1M
Robotics	\$28M	\$49M	\$4M	\$21M	\$96M	\$2M
Marketing	\$64M	\$32M	\$14M	\$280M	\$70M	\$770K
Health	\$13M	\$5M	\$11M	\$14M	\$21M	\$15M

Fintech startups raised the highest number of rounds over the past 18 months, followed by Transportation and Energy startups.

Number of rounds into Baltic startups by industry (2022-2023 H1) [»view more](#)



2. The Baltic Deep Tech Ecosystem

Deep Tech, a definition.

Deep Tech is fundamentally new science and engineering.

Deep Tech companies apply a novel scientific or engineering breakthrough for the first time in the form of a product.

This means there is technical risk in getting the idea to actually work.

Deep Tech starts with an extended R&D phase and involves a higher share of technical staff compared to conventional ventures. Deep Tech also often involves the development of hardware and/or IP which are more capital and time intensive.

Once technical risk is overcome, there is additional risk in proving market demand for that product. If market demand is proven, Deep Tech startups have stronger defensibility from competition thanks to technology barriers, instead of having to rely on network effects and market lock-up.

Download the *European Deep Tech Report 2023*

» [Download report](#)

Examples of today's key Deep Tech domains*.



Novel AI

- Generative AI
- AI-first biology
- Privacy-preserving AI
- Explainable AI
- AI acceleration
- Autonomous systems
- General purpose AI



Future of Computing

- Quantum computing
- Silicon photonics
- AR/VR/MR
- Neuromorphic & advanced AI chips
- Decentralized & distributed computing
- Brain-computer interfaces
- Ambient Computing



Novel Energy

- Nuclear fusion
- Next-gen battery chemistries
- Large-scale storage
- Photonics
- Green hydrogen
- Supercapacitors
- Waste heat recovery



Space Tech

- Reusable and next-gen rockets
- Satellites for communication & earth observation
- In-space transportation
- In-space manufacturing
- Debris removal

Scope of the Baltic Deep Tech & AI-Powered ecosystem.

Powered by AI

Part of the R&D intensive ecosystem,
Often integrated in Deep Tech value
chain and/or previously Deep Tech.

Cutting-edge R&D, building on next-gen
science and technology

Deep Tech

Cybersecurity

veriff



TRAPMINE



Robotics

STARSHIP

SquadRobotics

MindChip

ORIGIN

Space Tech



AISPECO

Energy



themo

EFENCO



PowerUP ENERGY TECHNOLOGIES

skeleton+

Transportation

Bolt

auvetech

BASETRACK



Other

Fintech, Legal, Foodtech

deponise



Nordigen PACTUM

PIXEVIA

europa

Alpha3D

Scope of this report.

Deep tech startups can come from all verticals, but just because a startups is from typically tech intensive sector, e.g. semiconductors or robotics, it does not make it automatically a deep tech startup.

Certain specific characteristics make startups deep tech, independent of its sector of operation.

The Baltic Deep Tech landscape.

Breakout & Late stage

Startups that have raised between €15-100M (Breakout) and over in one round.



Early stage

Startups that have raised between €0-15M in one round.

Estonia



Lithuania

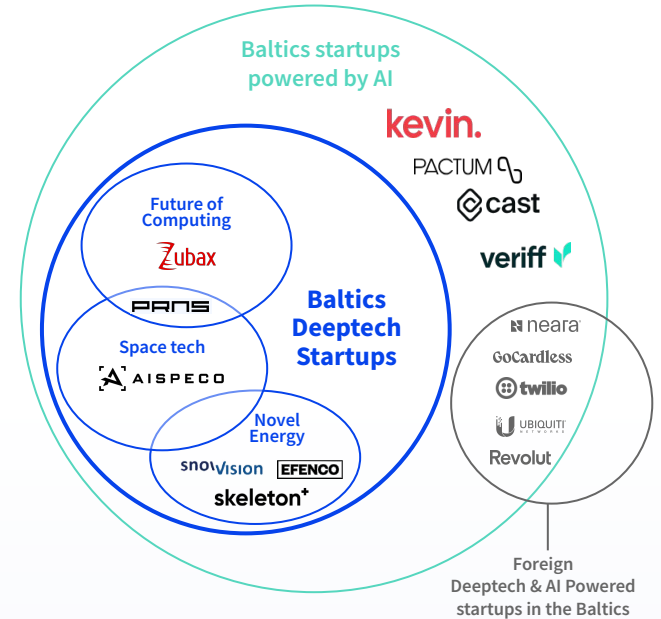


Latvia



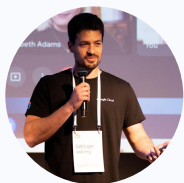
550+ Baltic Deep Tech startups

» Explore more



“

In the Baltics, we are seeing amazing deep tech startups which are working on revolutionizing healthcare, transportation, energy, and other industries.



Haris Alibegovic

Head of Digital Natives and Startups -
Central and Eastern Europe, Google Cloud
at **Google Cloud**

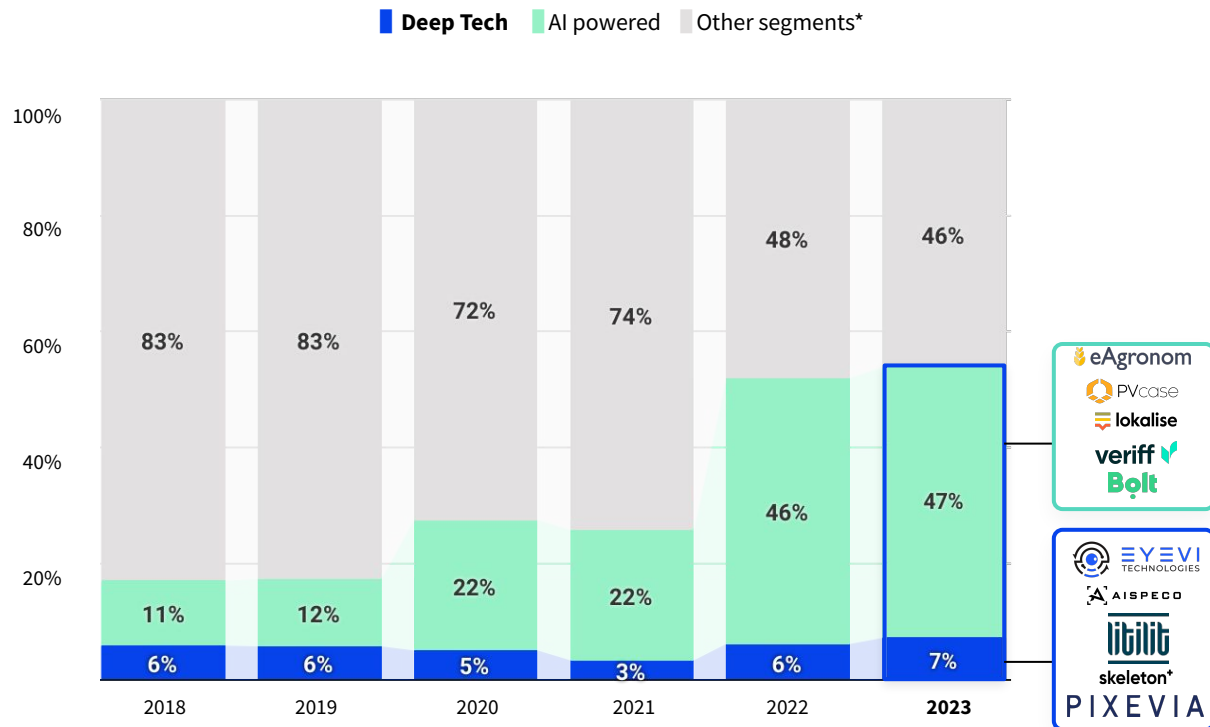
In the Baltics we are seeing amazing deep tech startups which are working on revolutionizing healthcare, transportation, energy, and other industries. Massive investments are being put in place to form the right teams and apply the right platforms and technology which can harness the power of AI in order to develop solutions that will be able to quickly scale and help us solve some of the world's toughest challenges.

In just the past 3 months, Google Cloud has partnered with over 90% of its Startup and Deep tech customers in the Baltics to explore the potential of GenAI. Globally, more than half of all funded gen AI startups are Google Cloud customers, including 70% of gen AI Unicorns. This is a testament to the strong interest in this technology among our customers and the various ways GenAI use cases can be implemented.

Google has a long history of supporting and powering innovation from startups, and the rise of generative AI has created a tremendous opportunity for these startups to bring new value to businesses through new models, solutions, and applications.” As such we offer multiple levels of engagement and support through our [AI Startup Program](#) to companies which are looking to quickly scale and power their solutions.

In 2023,
over half (54%)
of the combined
enterprise value
of Baltics startups
is derived from
**Deep Tech &
AI-powered
startups.**

Combined enterprise value of Baltic ecosystem



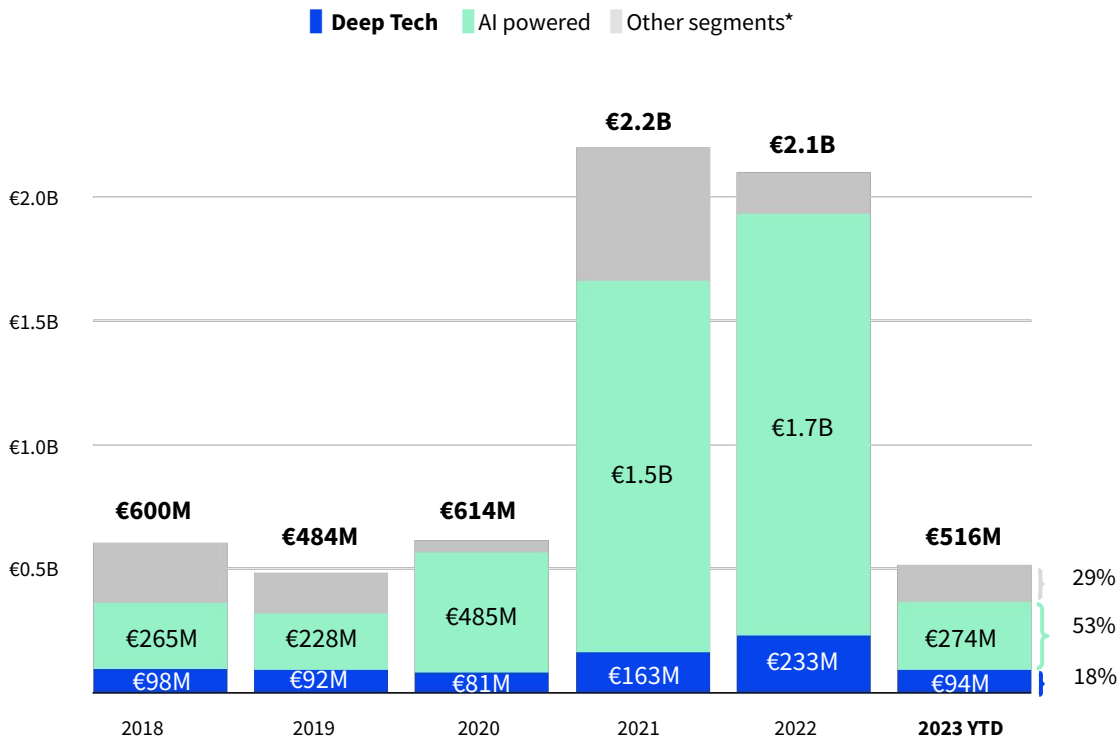
Dealroom.co.

* includes startups founded in the Baltics which have relocated their main center of business (HQ) abroad as they scale.

In 2023H1, 18% of VC funding into the Baltics went into Deep Tech startups, up from 13% in 2020.






Explore the funding rounds into [Deep Tech](#), [AI powered startups](#) as well as the [rest of the Baltics ecosystem](#) directly on the Dealroom.co platform.

VC funding into Baltic startups by segment










Baltic Deep Tech startups raised a record €233M in 2022, and over €93M in 2023 so far.

Selected Baltic Deep Tech rounds in 2022-2023 YTD [» view online](#)

Startup	Funding round	Date	Deep Tech Focus
	€55M Convertible	Jul 2023	Energy Storage
	€37M Series A	Mar 2023	Robotics
	€36M Late VC	Dec 2022	Clean energy
	€13M Series A	Jan 2022	Virtual Reality
	€5.5M Early VC	April 2022	Cyber security

Explore Deep Tech funding rounds

NAME	INVESTORS	MARKET	LOCATION
 Aerones Robotic systems for a smarter win...	Mantas Mikuckas Change Ventures Haniel Lightrock Blume Equity	energy robotics clean energy	Riga, Latvia
 BaseTrack New approach to vehicle control. ...	-	B2B transportation autonomous & sensor tech	Tallinn, Estonia
 LightCode Photonics Innovates LIDARS into cameras to ...	Intel Ignite	transportation semiconductors autonomous & sensor tech	Tartu, Estonia
 Litolit Advancing industries through well...	Taiwania Capital Iron Wolf Capital	health semiconductors medical devices	Vilnius, Lithuania
 Efenco Cold-Plasma-Assisted Carbon Neu...	EIC Fund (European Innovation Council Fund)	energy waste solution energy efficiency	Tallinn, Estonia
 Uplift.io incubates, launch and accelerate t...	Uniswap Labs Ventures	fintech crypto and defi	Tallinn, Estonia
 TERRAWASTE A pollution free planet with a pollu...	Techstars	energy chemicals	Rotterdam, Netherlands

[View more »](#)

“ The number of Deep Tech transactions has increased in recent years and local VC funds have contributed to this trend.



Andrius Ivanauskas

Partner
at **WALLESS**

We also notice that larger AI-driven startups in fintech and healthtech have attracted a vast interest from international VC players as well.

Venture deals are the definition of how we do it at WALLESS – fast, straightforward, and with direct language that means a lot to the founders and the investors.








In deep tech transactions a longer product development horizon requires to know founder teams better while at the same following global VC market trends.

Working with AI startups, new IP questions are unresolved and need to be tackled with contractual language despite EU Copyright Directive introducing text and data mining exemption.”

Discover 300+ Baltic Deep Tech startups using predictive signals.

» Top 300+ Deep Tech startups to watch

dealroom SIGNAL

NAME	INVESTORS	MARKET	LOCATION
 Aerones Robotic systems for a smarter win...	Mantas Mikuckas Change Ventures Haniel Lightrock Blume Equity	energy robotics clean energy	Riga, Latvia
 BaseTrack New approach to vehicle control. ...	-	B2B transportation autonomous & sensor tech	Tallinn, Estonia
 LightCode Photonics Innovates LIDARS into cameras to ...	Intel Ignite	transportation semiconductors autonomous & sensor tech	Tartu, Estonia
 Lilit Advancing industries through well...	Taiwania Capital Iron Wolf Capital	health semiconductors medical devices	Vilnius, Lithuania
 Efenco Cold-Plasma-Assisted Carbon Neu...	EIC Fund (European Innovation Council Fund)	energy waste solution energy efficiency	Tallinn, Estonia
 Uplift.io Incubates, launch and accelerate t...	Uniswap Labs Ventures	fintech crypto and defi	Tallinn, Estonia
 TERRAWASTE A pollution free planet with a pollu...	Techstars	energy chemicals	Rotterdam, Netherlands

The Baltic Deep Tech & AI ecosystem builds on a dense network of academic and scientific expertise across the region.

Vilnius University




nano avionics



W-E FLEET



ktu kaunas university of technology



PVcase



CUJOAI


» 120+ startups founded by Alumni

ISM UNIVERSITY OF MANAGEMENT AND ECONOMICS




» 80+ startups founded by Alumni

TAL TECH



EYEVI TECHNOLOGIES

Drug Hunter




DEFENDEC


» TalTech spinouts

» 280+ startups founded by Alumni

TALLINN UNIVERSITY



cachet.



kraftworks

» 280+ startups founded by Alumni

UNIVERSITY OF TARTU



LIGHTCODE PHOTONICS




CATALYST

Gearbox BIOSCIENCES

» 30+ Tartu spinouts

» 280+ startups founded by Alumni

UNIVERSITY OF LATVIA



infogram

CENOS

PRINTFUL

» 280+ startups founded by Alumni

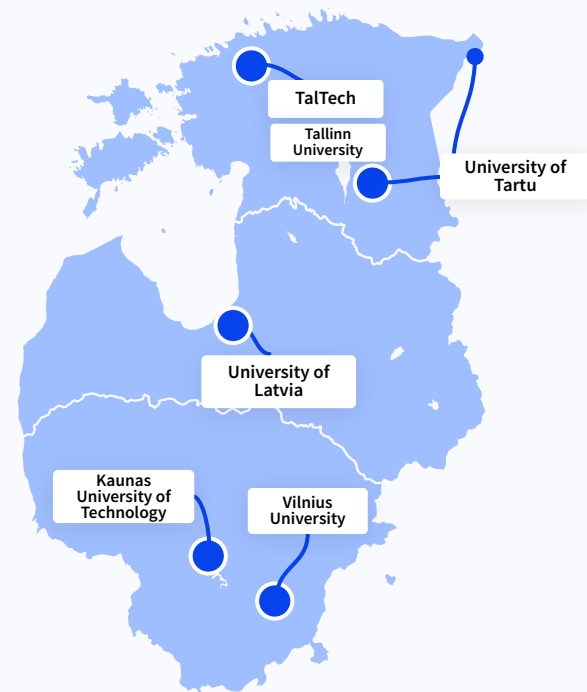
1862
RĪGAS TEHNISKĀ UNIVERSITĀTE



AERONES

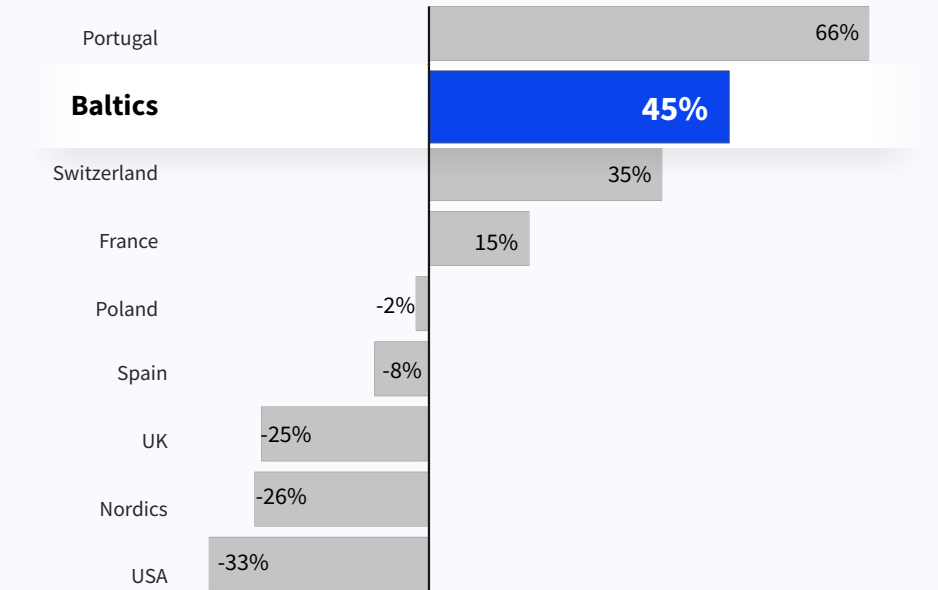
SquadRobotics

» 280+ startups founded by Alumni

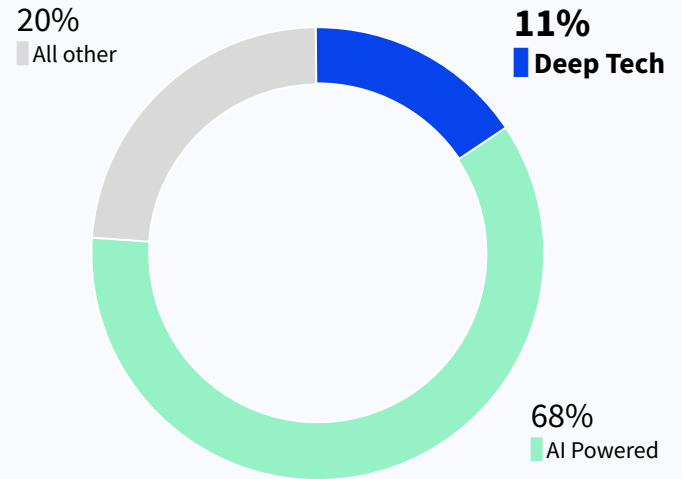


For VC investment into Deep Tech, Baltic countries are experiencing faster growth compared to their European and international counterparts.

Growth in VC funding, Deeptech (2022 vs 2021)

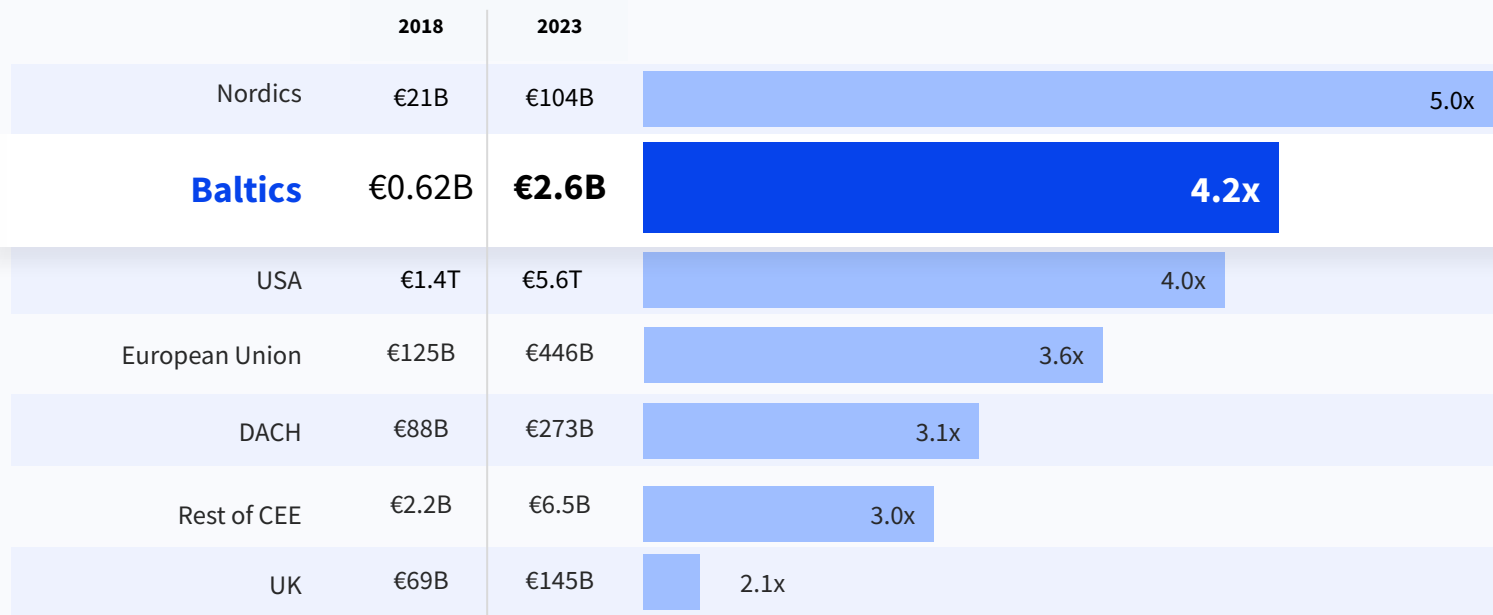


VC funding in the Baltics, average over last 5 years.



The Baltic Deep Tech startup ecosystem has grown four-fold in the past five years, outpacing most European and global averages.

Combined enterprise value of Deep Tech startups across selected regions
5-year growth (2018-2023 H1)



“ Deep tech and AI startups should serve as the engines of Europe's future competitiveness, helping address demographic and economic challenges like an aging population, workforce demand, and slower economic growth.

[»Read more](#)



Mindaugas Eglinskas
CEO and Founder at **PIXEVIA**

“ New partnerships are being formulated as the race for “new” global mapping market is ongoing. The fundamentals for the future of geospatial data are made today.

[»Read more](#)



Gaspar Anton
Founder and CEO at **EYEV1**

“ At Squad Robotics we are excited to play a part in this technological renaissance with our Autopilot for autonomous robots. We are poised to lead the Baltic region into an era where technology knows no bounds.”

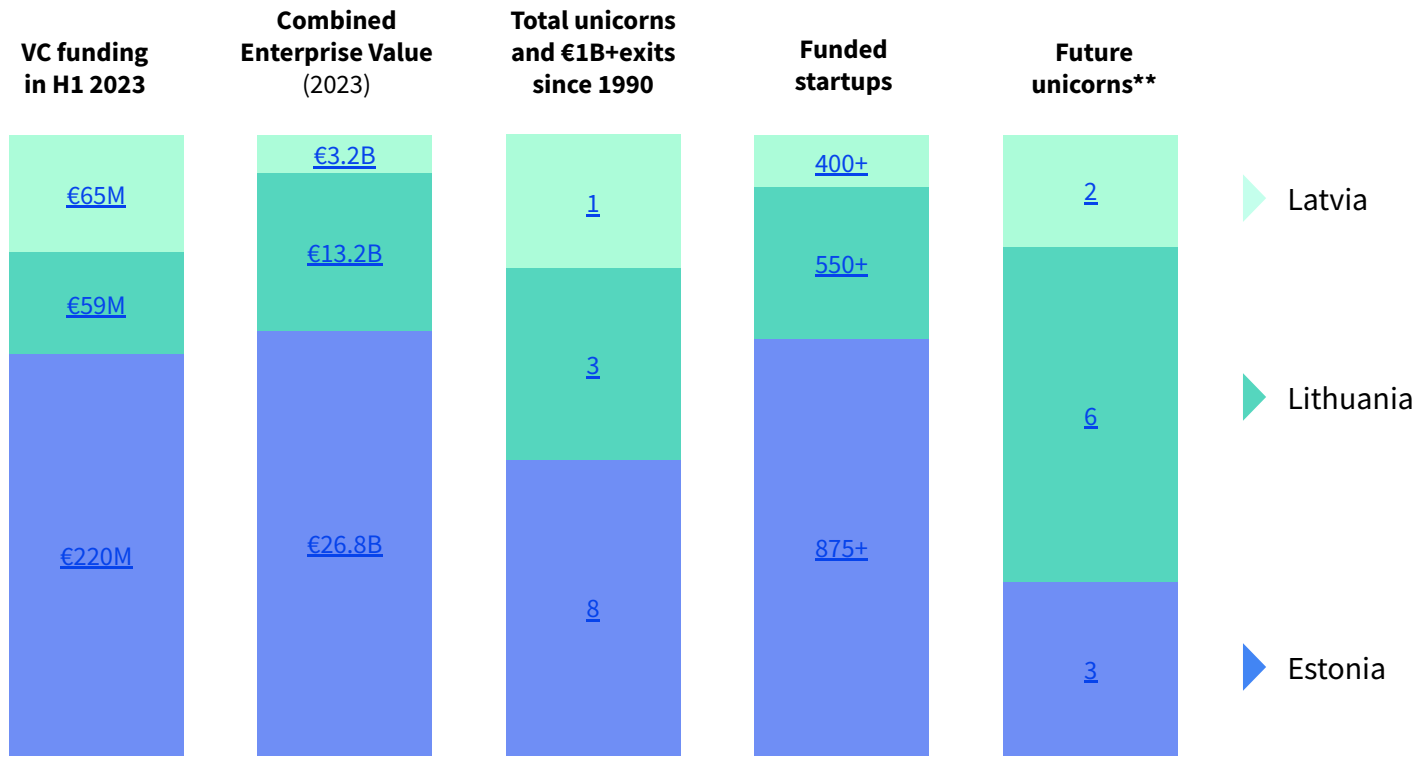
[»Read more](#)



Matīss Brunavs
Founder and CEO at **Squad Robotics**

3. State of the Baltic startup ecosystem.

The last decade has proven that great tech companies can come from anywhere, with the Baltic startup ecosystem now increasingly distributed.



Baltics breakout startups & rising stars.

- Unicorns
- Future Unicorns
- Rising Stars

Relocated overseas

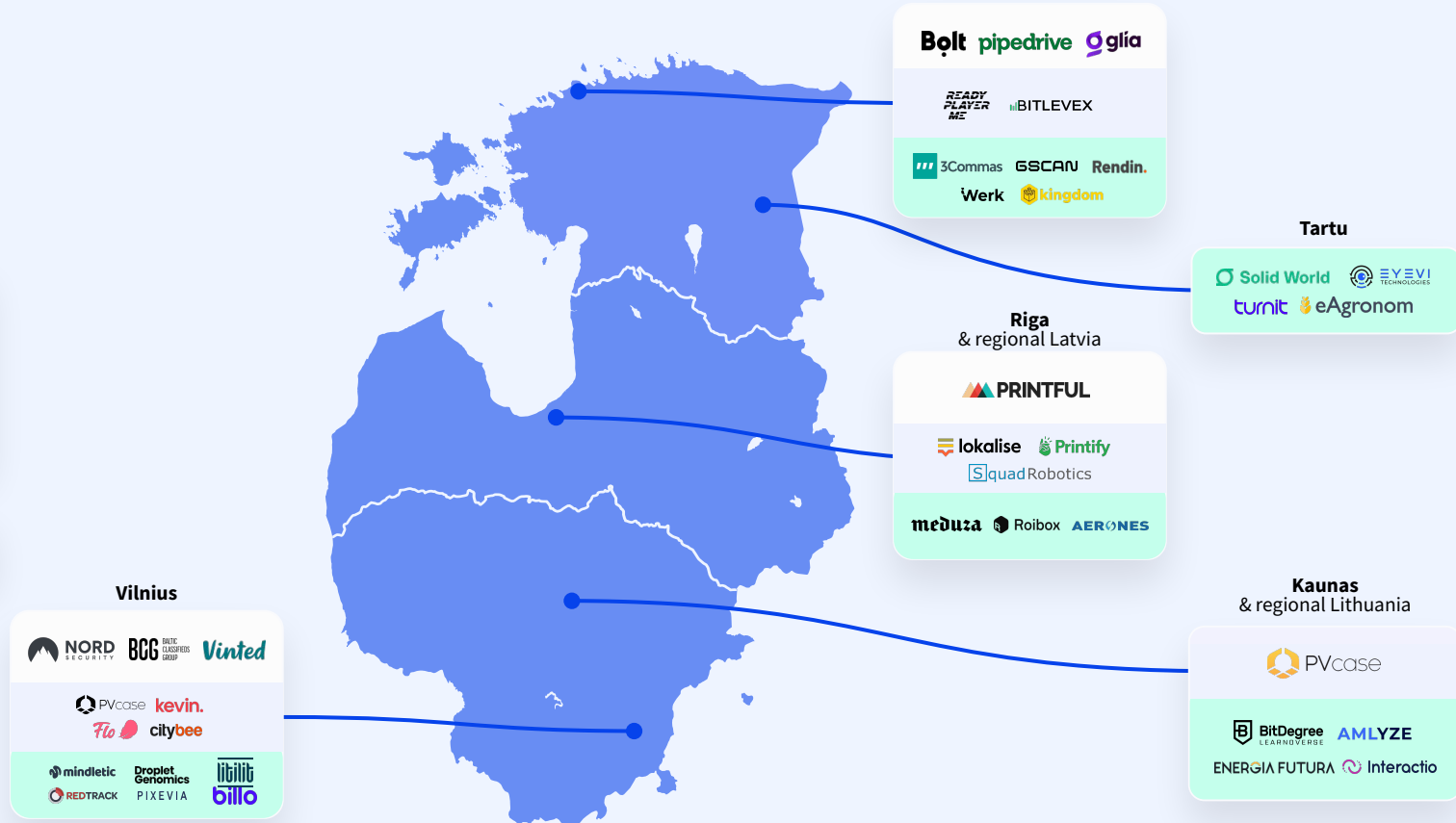
skype
playtech
WARGAMING.NET
pipedrive

FRVR
BIMA
VIVINO

Speiz

Moved to the Baltics

drugcard
land
workee
lele



FOCUS ON

Lithuania

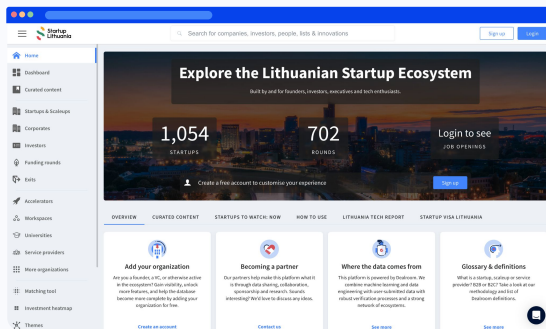
Explore the
» [Lithuanian tech ecosystem](#)

560+
Funded Startups

€13.2B
Enterprise value
in 2023

1.8x
Enterprise value
since 2018

Explore the
» [Lithuanian Startup ecosystem](#)



Selected startups from Lithuania [»view more](#)

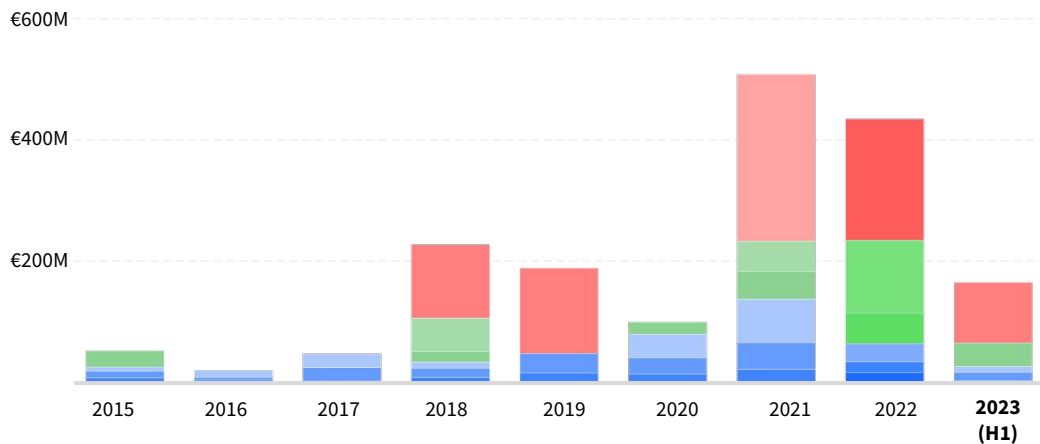


Spinouts
[»view more](#)



VC investment by stage

■ Early stage (€0-15M) ■ Breakout stage (€15M-€100M) ■ Megarounds (€100M+)



“Lithuania is undeniably on its way to become one of the deep tech most focused ecosystems in Europe.”



Roberta Rudokienė
Manager at **Startup Lithuania**

In recent years, characterized by uncertainties and global changes, a significant transformation is unfolding within Lithuania’s startup ecosystem. The most notable development has been the rise of deep tech. Our rich talent pool, comprising not only of engineers but also biotechnologists and ICT experts, combined with favorable business environment and a robust economy all contribute to this deep tech growth.

Lithuania is undeniably on its way to become one of the deep tech most focused ecosystems in Europe. As technologies are accelerating and new businesses emerging, it’s important to have support from venture capital and from business angels to help the development of these startups.”

FOCUS ON

Estonia

Explore the

[» Estonian tech ecosystem](#)

875+

Funded Startups

€26.8B

Enterprise value
in 2023

1.8x

Enterprise value
since 2018

Coming soon –
Estonian Startup ecosystem

Powered by

STARTUP
ESTONIA



Selected startups from Estonia [»view more](#)

Bolt

eurora

veriff

skeleton+

eAgronom



Rendin.

READY
PLAYER
ME

katana

montonio

driveX

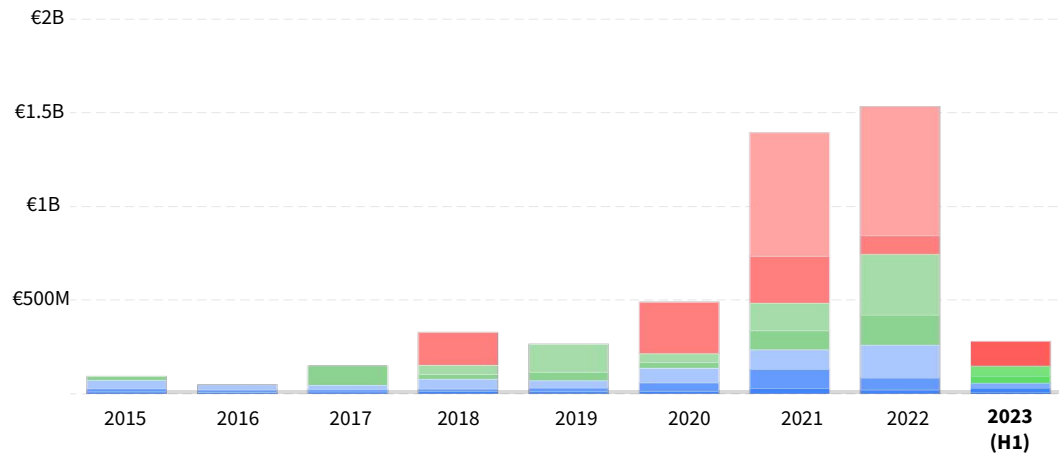
COMODULE

Spinouts
[»view more](#)



VC investment by stage

■ Early stage (€0-15M) ■ Breakout stage (€15M-€100M) ■ Megarounds (€100M+)



FOCUS ON

Latvia

Explore the

[» Latvian tech ecosystem](#)

400+

Funded startups

€3.2B

Enterprise value
in 2023

5.4x

Enterprise value
since 2018

Explore more on



[» Learn more](#)

Selected startups from Latvia

[»view more](#)



Cellbox Labs



lokalise



AERONES



GIRAFFE360



Roibox



CENOS

Corebook

SquadRobotics

solfeg.io

Spinouts

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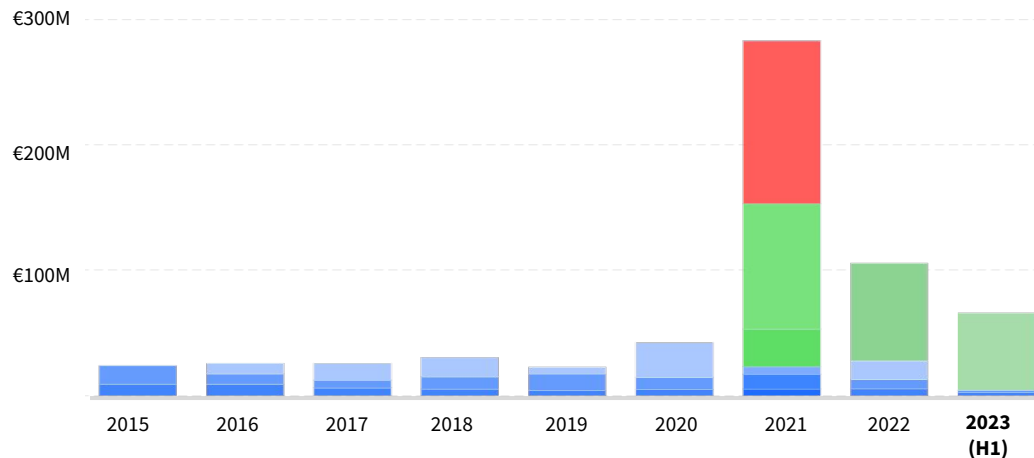
Cellbox Labs



SEPSISCAN

VC investment by stage

■ Early stage (€0-15M) ■ Breakout stage (€15M-€100M) ■ Megarounds (€100M+)



A. Methodology.

Methodology & definitions

What is a startup?

Companies designed to grow fast. Generally, such companies are VC-investable businesses.

When startups are successful, they develop into scaleups (>50 people), grownups (>500 people) and result in big companies. Only companies founded since 1990 are included in this report.

What is a startup?

What is a unicorn?

Unicorns are (former) startups that reached US\$ 1B valuation or exit at one point in time.

What is a Unicorn?

Underlying Data

Dealroom's proprietary database and software aggregate data from multiple sources: harvesting public information, user-submitted data verified by Dealroom, data engineering. All data is verified and curated with an extensive manual process.

The data on which this report builds is available via app.dealroom.co. For more info please visit dealroom.co or contact support@dealroom.co.

Venture Capital, Investors

Domestic investors refer to Baltics investors. Europe investors includes the entire European continent, the UK and Russia, but excludes Turkey and Portugal.

Investment are referred to by their round labels such as Seed, Series A, B, C, ... late stage, and growth equity. VC investments exclude debt, non-equity funding, lending capital and grants.

Regional Breakdown

In this report, the nations that are considered as part of the Baltics include: Estonia, Lithuania, and Latvia.

While many startups founded in the Baltics relocate beyond their borders, most maintain business-critical ties to their homelands.

In order to take this reality into account, this report includes both Baltic-based startups, which maintain their main center of business (HQ) in their country of origin, and Baltic-founded startups, which relocated their HQ outside of the Baltics.

