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# Artificial Intelligence Startups & Scaleups in the Netherlands

2021



# techleap.nl

Techleap.nl is a non-profit publicly funded organisation helping to quantify and accelerate the tech ecosystem of the Netherlands. Empowering people and their tech companies to scale with programs and initiatives for improving access to capital, market and talent. From international missions to diversity training, Techleap.nl targets all areas of the ecosystem. Special Envoy for Techleap.nl is Constantijn van Oranje.

The NL AI Coalition brings organizations together to address the challenges of AI application areas, including societal governmental missions.

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# Foreword

Although the notion of Artificial Intelligence (AI) emerged in the middle of the previous century, over the past decade the technology has impacted most sectors in society in significant ways. There's no question anymore as to if a certain industry will be impacted, but rather to what extent. What is certain, is that startups & scaleups will be a driving force in the advancement and adoption of AI.

Since the 2018 StartupDelta report, a number of developments have occurred in The Netherlands, such as the adoption of a [Strategic Action Plan for AI \(SAPAI\)](#), the launch of the [NL AICoalition](#), founding of [ICAI](#) and [ICAI labs](#), [ELLIS](#) has come to The Netherlands and a number of corporates have launched [KickstartAI](#).

The investments and current successes in the startup ecosystem have created a burgeoning AI ecosystem. However, in this highly competitive world we must continuously invest and develop to remain relevant. While we grow our capabilities and commercial success we should do so within the framework of our national and European values. This is challenging as other nations don't always sing from the same song sheet; undermining European competitiveness.

The results of this report are both hopeful and worrying. The growth in the number of AI startups and jobs show that Artificial Intelligence is gaining more and more ground. At the same time, the research shows that the investment rounds in AI startups and scaleups are increasing worldwide, except in the Netherlands. Most funding flows to AI ventures in the US, the United Kingdom, Belgium, Germany and France. In addition, while the number of exits were steadily rising up until 2018, in the last two years we see a slight decline.

Broad and deep AI adoption is needed to fuel the tech ecosystem and ensure competitiveness of Dutch business. Tech startups and scaleups are acting as the technology catalyst for this adoption. Some are using it as a complementary technology and with others it is at the heart of their business. In line with this, we've broken up the startups into two categories, AI-Driven Startups (using AI as a tool in their business) and AI-Core startups (using patented AI as a part of their core business).

In addition to the insights based on research data, the report contains a selection of hurdles AI companies face in the Health sector. This is to highlight certain sectors in the AI startup ecosystem would not only benefit from additional investment, but also from clearing out systematic bottlenecks in order to create a thriving ecosystem for AI.

# At a Glance



Dutch artificial intelligence startups and scaleups represent 10% of the total number of companies in the European Union, compared to 16% in France and 13% in Germany. Per capita, the Netherlands has the highest density of AI startups in the EU.



AI scaleups are real job creators: over the past 3 years, employee growth was 33% on average. This is 4x higher than employment growth in the IT sector.



Core AI companies hold on average 2 AI related patents. They are more resilient than AI Driven companies (no patents): AI Core companies tend to be more mature (early / late growth) and attract more funding compared to AI Driven companies.



Dutch AI startups attract 8% of all VC deals and only 3% of funding, proving that they raise less and especially smaller rounds compared to other European nations.



AI companies in the Netherlands have more gender diversity (15% has female (co)founder) than the global average (11%) but it's evident much work still needs to be done.

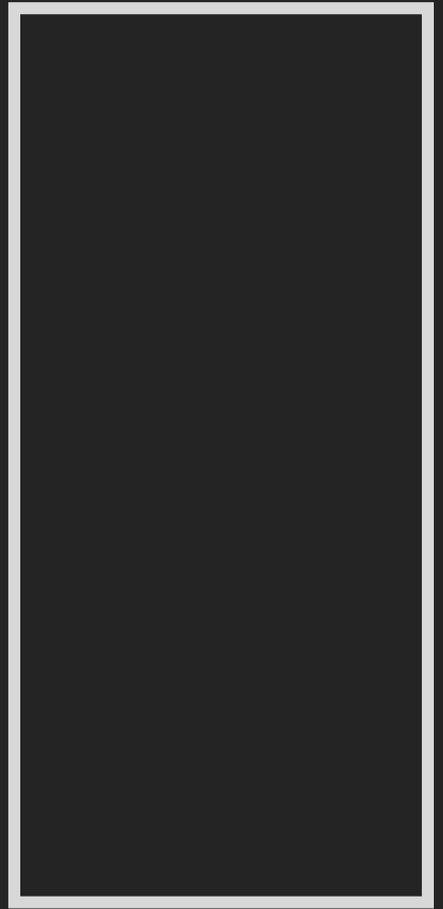
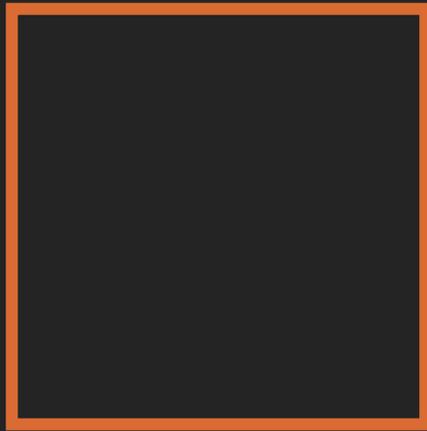


The number of exits of Dutch AI companies is on the decline again with 7 exits in 2020 after growing from 3 exits in 2015 to 10 in 2018.

Interestingly, for Core AI companies, the exits that do take place, are relatively early (around Series A). Could it be that the climate for AI startups in the Netherlands - low funding appetite & persistent system barriers e.g. in HealthTech - discourage founders from continuing?

## 2. Artificial Intelligence Report

# Startups & Scaleups

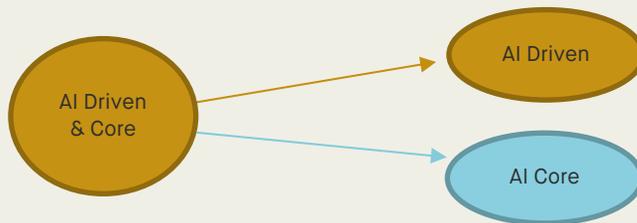


## AI Driven & Core

Over the past 10 years, there has been a boom in patent applications for artificial intelligence worldwide, especially those with an orientation towards its application in industrial solutions. With an orientation towards the application towards industrial solutions<sup>1</sup>. Several interrelated factors are causing this boom in AI within recent years: improvement in processing power, the development of powerful computing architectures which enables AI applications, the availability of large volume of data (which is crucial for training AI models) and improving AI core model techniques (e.g., neural network and deep learning)<sup>2</sup>.

The distinction is made between AI Driven and AI Core startups to understand the extent to which startups are creating their own artificial intelligence solutions: do they develop AI technologies within their core technology or are they using artificial intelligence solutions for their operational purposes? As many AI models and techniques are application-agnostic - meaning that they can be used in various technology fields - startups within the AI Driven category can come from various industries. The definition of AI Driven and AI Core startups are the following:

AI Driven startups are startups using AI within their business e.g. for maintenance, analysis, operational purpose. AI Core startups are startups having at least one patent registered related to the use of their AI.



## The Netherlands Represents 10% of EU AI Companies



**Figure 1**  
Total Number of Startups & Scaleups in Artificial Intelligence by Country

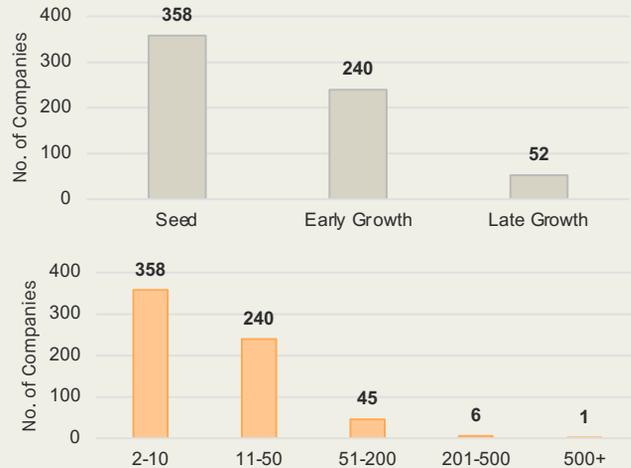
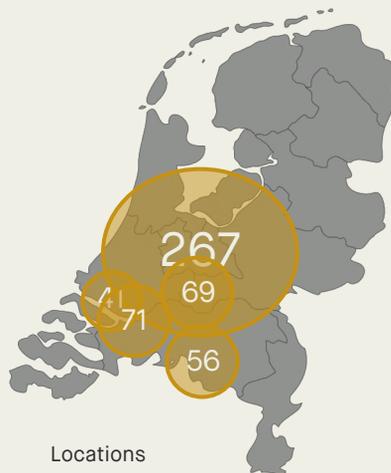
The number of startups and scaleups active in AI in the European Union is on par with US<sup>3</sup>. Due to the geographically decentralized location of hubs in the EU, knowledge sharing between European companies may be less compared to AI companies in the typical East and West Coast hubs in the US. On a per capita basis, Israel by far exceeds the rest of the group, beating Singapore placed 2<sup>nd</sup> by a factor of 30. The European Union has the worst per capita ratio of AI startups and scaleups from the list. But within Europe, the Netherlands is 1<sup>st</sup> place by the number of startups and scaleups per capita.

<sup>1</sup>WIPO Technology Trends 2019: Artificial Intelligence([source](#))

<sup>2</sup>European Patent Office: Artificial Intelligence([source](#))

<sup>3</sup>Dealroom.co data on AI query chosen ([link](#))

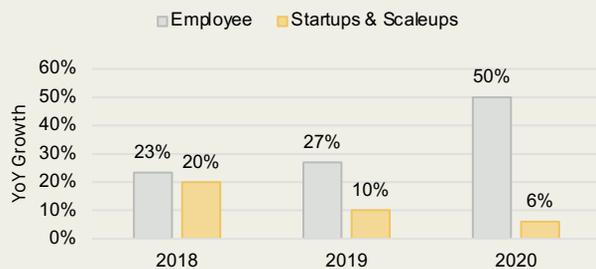
## Startups & Scaleups - AI Driven & Core



The Amsterdam region still dominates the Dutch AI startup & scaleup landscape.

37% of Dutch AI startups & scaleups are located in Amsterdam. This is followed by Rotterdam, Utrecht and The Hague. Bruchem (Writefull) and Gorinchem (REVOLTT) are some locations in the Netherlands with few (often only one) AI startups & scaleups.

**Figure 2 - 4**  
Geographic location by number of location (Left), Number of Companies by Growth Stage (Upper Right) and by Range of Employees (Lower Right)



**Figure 5**  
Percentage Yearly Growth for the Past Three Years in Employees and Number of Startups & Scaleups in Artificial Intelligence

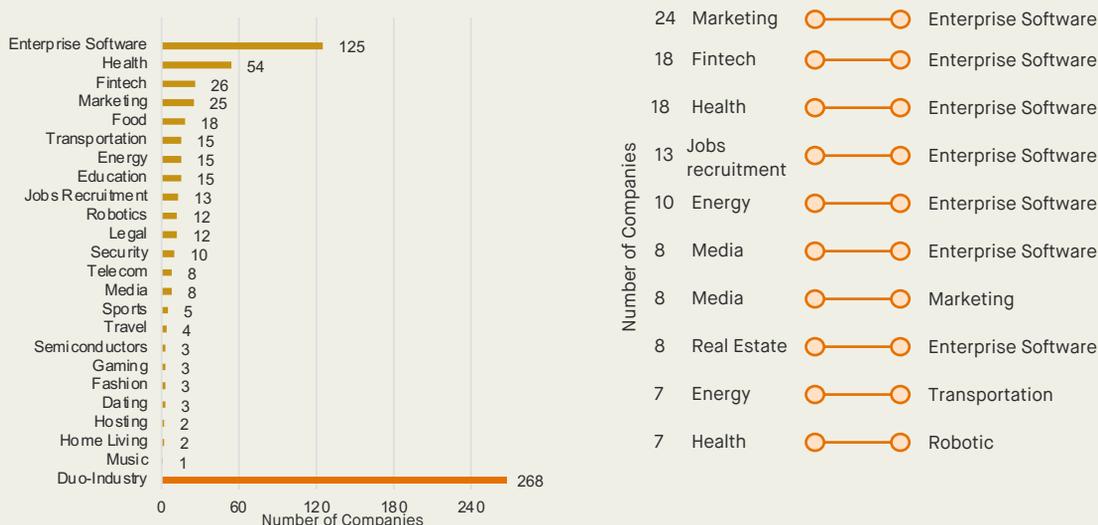
The AI startup & Scaleup community in the Netherlands shows signs of maturing: while the growth in the number of startups tapers off, the growth in employee numbers doubled last year.

The number of AI startups & scaleups grew at an average rate of +12%, doubling the national average for IT companies of +5.2% (CBS).

With a total of 14,524 employees and 650 companies, the average AI company in our radar has a mean average of 22 employees, and a median of 9. Having an average of 22 employees, this indicates a growing number of larger startups.

<sup>3</sup>Startup jobs are a growth engine worth strengthening, September 2020 (source)

\*Estimates based on reported numbers from the China Institute of Science and Technology Policy at Tsinghua University



**Figure 6 & 7**  
 Number of Companies by Industry for Companies With a Single Industry (Left) and Top 10 Double Industry Pairs (Right)

Health, Fintech, Marketing and Food are the most popular industries after Enterprise Software. Together they represent 27% of the total number of AI companies in the Netherlands.

Duo-Industrial companies are companies that are active in two industries, such as Robotics and Health. It is interesting to note that Robotics and Transportation are categories that jump higher in the list of companies that are active in two industries. On the other hand, Education and Legal appear to be areas where AI startups and scaleups focus tend to focus more singularly.

### Case Study: Bottlenecks AI Startups & Scaleups in Health

Growing from an AI start-up to a mature business is tough in any industry, but a start-up in the medical field has to overcome many more additional hurdles, like:

1. Access to health data is an uncertain and lengthy process, with no guarantee for success, which often has to be repeated with every individual institution.
2. Complying with laws and regulations related to the use of medical data (GDPR, data security, etc.) and the Medical Device regulation in case of hardware solutions
3. The process for certification (NEN7510-13, ISO27001) is often too costly and time consuming for startups
4. Implementation of enhancements in existing protocols is only possible under strict conditions
5. Operational funding of innovations by healthcare institutions appears to be a difficult fit into existing financing structures in healthcare
6. IT infrastructure: it's complicated to integrate solutions into existing systems and healthcare providers don't have the bandwidth to facilitate this process

We spoke to many founders in AI HealthTech and here are just some of the quotes they came back with.

Mark-Jan Harte, CEO Aidence "For years we've been trying to get data from Dutch hospitals. We've been unsuccessful so far. We are reliant on American data. As Europeans we want to compete with the US and China, but we can't use any European (health) data. That has to change."

Yosef Safi Harb, CEO Happitech "The AI HealthTech ecosystem would benefit most if Dutch hospitals were given sufficient resources to seriously study technologies at a faster pace, generating evidence for companies so they can show their advocacy and safety. As of now we can not compete with other countries".

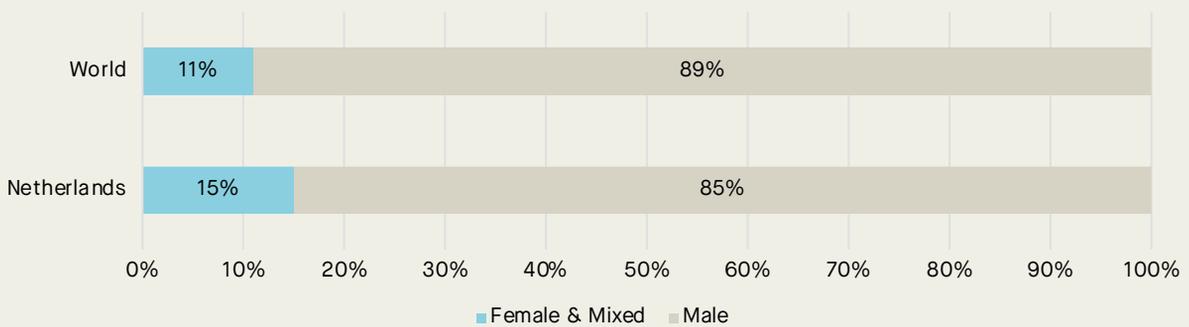
## Startups & Scaleups - AI Driven & Core

#	Logo	Company Name	No. of Employees
1		Picnic	1601
2		Flytxt	415
3		CANDID Group	366
4		Bynder	340
5		Mollie	317
6		Victor Davis	201
7		Bijles Aan Huis	173
8		Otrium	173
9		Luminis Arnhem BV	166
10		FRISS	151

#	Logo	Company Name	Total Funding (€ M)
1		Picnic	300
2		BitFury Group	181,97
3		Otrium	141,69
4		Mollie	121,36
5		Pyramid Analytics	60,45
6		Eclectiq	40,46
7		HousingAnywhere	36,06
8		GeoPhy	30
9		Hiber	28,17
10		Quin	25

The top 20% of all AI startups & scaleups account for 63% of total employees within the AI startup ecosystem, a percentage higher than last year's 50%. Moreover, 64% of all AI funding goes to the top 10 biggest startups and scaleups, a number that is lower compared to last year's 70%.

**Figure 8 & 9**  
Top 10 Companies by Number of Employees (Left) and Total Funding (Right)



The Netherlands counts 56 AI startups and scaleups that are founded by at least one woman. With examples such as Equalture, Gearbox Innovations and Seedlink.

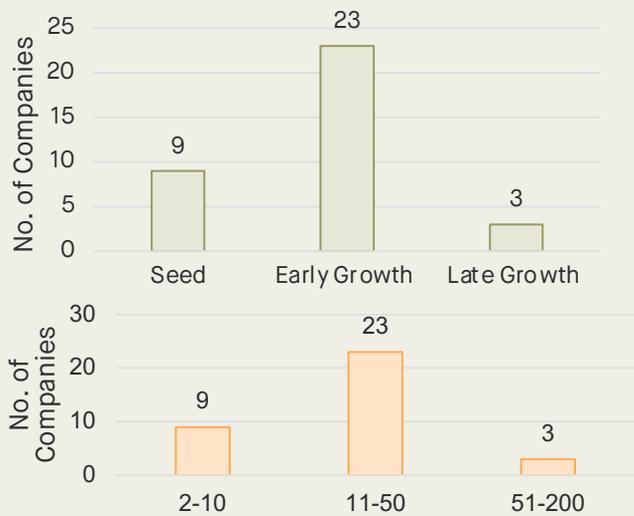
**Figure 11**  
Founder Gender Mix Distribution for Dutch AI Startups & Scaleups and World

# 74% of AI Core is Early Growth or Later

## AI Core

AI Core startups have a much longer time-to-market compared to AI Driven startups due to the research and development (R&D) required for their core AI technology to be developed and patented. Depending on the type of their product, the research time-to-market is even longer when their core technology is hardware based. Software based products may take up to 5 years to find their market fit, while hardware-based products may take 6-12 years to find their market fit.

Within the past decade, global patent filing technologies involving smart connected objects grew on average annually by about 20%. One of the key drivers for this growth is AI. Patents in AI are particularly important due to their dynamic nature in their application area. AI is abstract in nature – it is based on computational models and mathematical algorithms. Patents in AI may be granted when AI is applied to solve a technical problem in field of technology<sup>2</sup>.



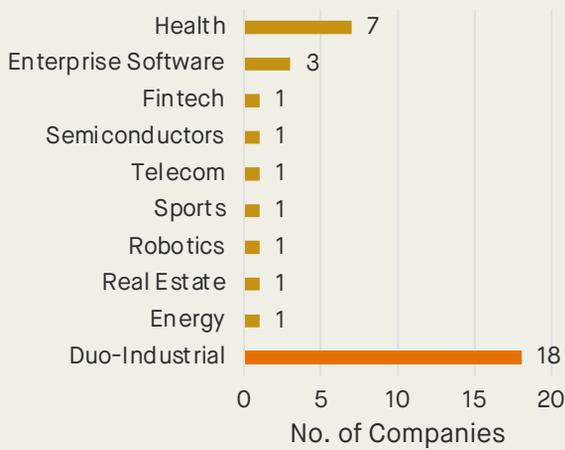
**Figure C.1 – C.3**

Total Number of AI Core Startups & Scaleups by City (Left), by Growth Stage (Upper Right) and by Number of Employees (Lower Right)

AI startups and scaleups with intellectual property tend to be more mature.

On average, AI Core startups and scaleups are also founded earlier than AI Driven startups and scaleups. AI Core companies were founded on average around 2013, while AI Driven companies were founded in 2015. Also, generally, the more patents an AI Core company holds, the older it is.

# Health Startups are Dominant in Core AI Technologies



Health is the most popular industry for AI Core startups and scaleups.

Whenever AI Core companies are active in two industries, they focus mostly on Software, Robotics or Real Estate as a second industry. AI Core companies grow on average slower than the AI Driven group, as the former are more mature. Growth in the new AI Core companies is also smaller than in AI Driven companies.

**Figure C.3 – C.4**  
Number of AI Core Companies by Industry for (Left), Top 4 Duo-Industrial Combinations (Upper Right)

#	Logo	Company Name	No. of Employees
1		Hiber	99
2		Be Informed	62
3		Bird Control Group	61
4		Aidence	54
5		PHYSEE	50

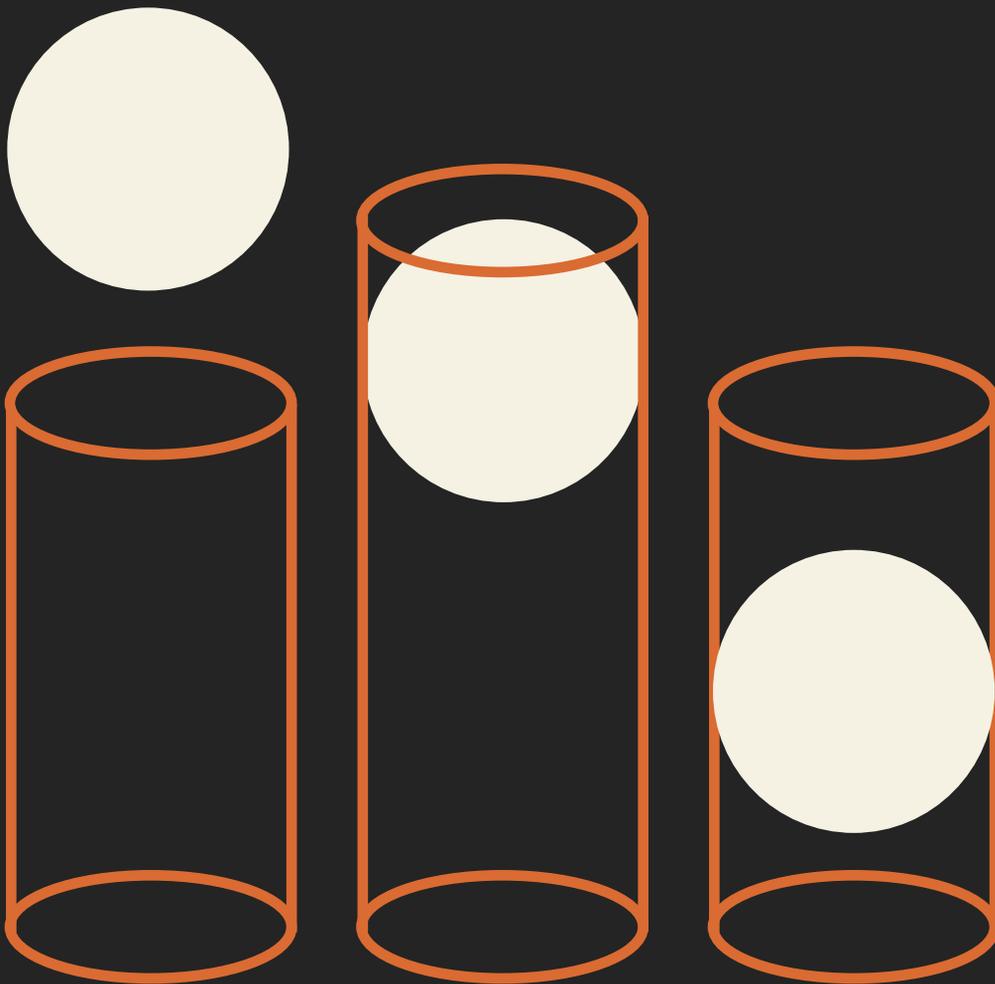
#	Logo	Company Name	Total Funding (€, M)
1		Hiber	28,17
2		Aidence	14,21
3		PHYSEE	10,14
4		Khondrion	6,03
5		SynerScope	6

Two notable 2020 rounds by the AI Core group of companies include Innatera Nanosystems’s €5M Seed Investment by n-to-v Partners and Aidence’ €1,91M Grant by the European Innovation Council.

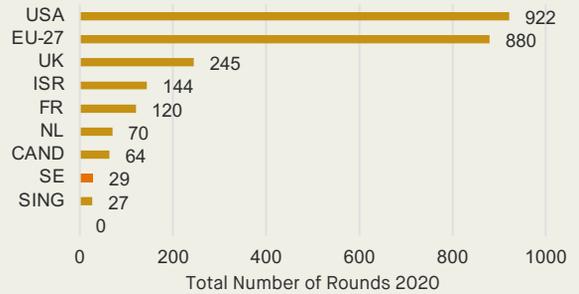
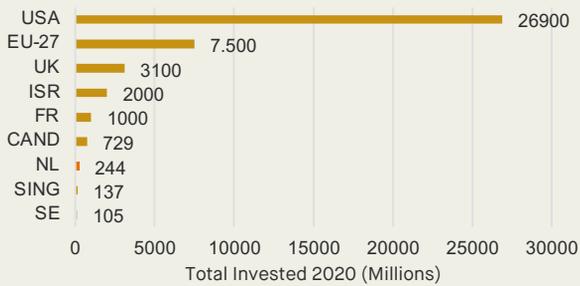
**Figure C.5 – C.6**  
Top 5 AI Core Companies by Employees (Upper Left), Total Funding (Upper Right)

### 3. Artificial Intelligence Report

# Investments



## Investments – AI Driven & Core



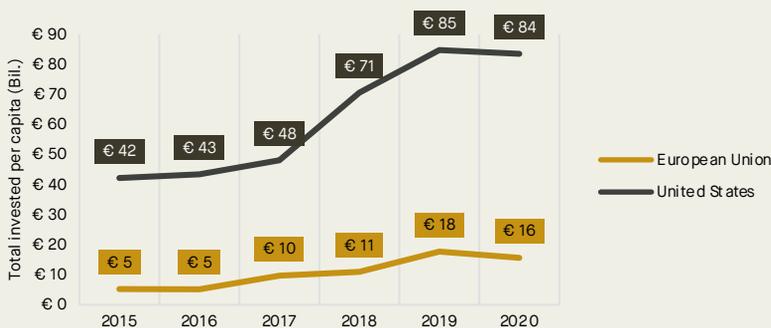
Despite having a smaller population than the EU, the USA sees 3 times more investment.

This may be explained by the large number of scaleups, having obtained more funding and generating more revenue, due to its larger market coverage.

Some prominent 2020 rounds include Mollie's €96M Series B, Pyramid Analytics's €22M Late VC, ElectricIQ's €20M Series C, Castor EDC's €10M Series A and Florn's €9M Early VC.

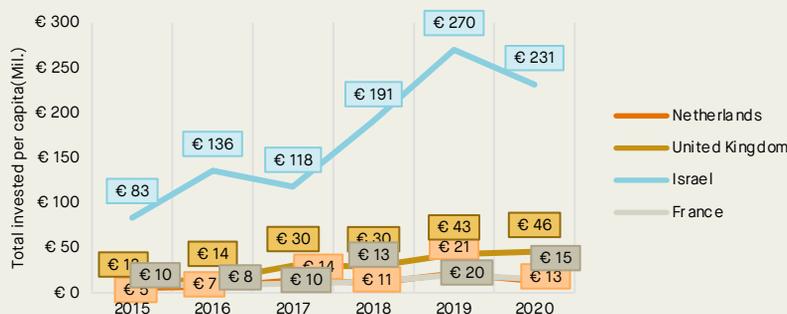
**Figure 12 & 13**

Total Invested in Artificial Intelligence Startups & Scaleups by Country (Left) and Total Number of Rounds by Country (Right)



The investment gap between Europe and the US is increasing.

In 2020 US investments in AI per capita were over 5 times higher than EU investments.



There has been a decline in total investment per capita in the Netherlands over the past 4 years.

While countries like the UK managed to maintain their growth trajectory, the Netherlands in 2020 fell back below 2017 level in terms of AI investment per capita.

**Figure 14 & 15**  
Total Invested per capita from 2015

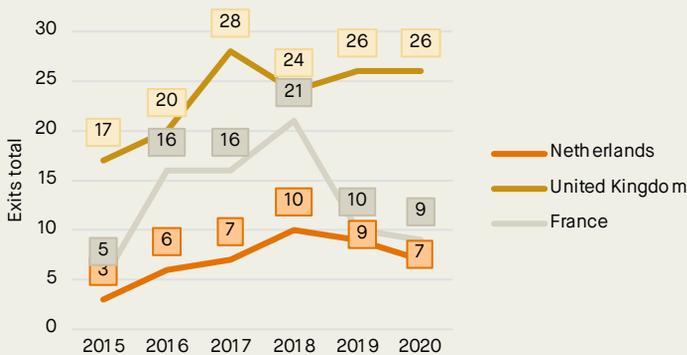
# AI Core Companies Raise More Funding on Average



**Figure 16**  
AI Driven and Core Company Average Round Size by Type of round

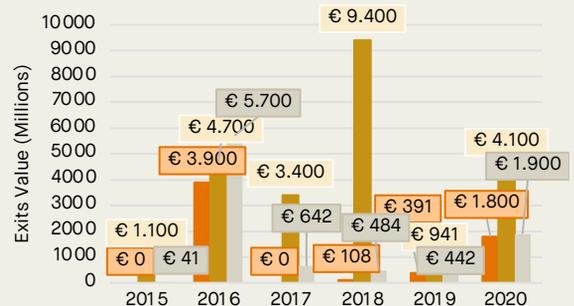
AI Core companies raise more funds compared to AI Driven companies.

AI Core companies also raise more funding in earlier funding stages up to series A when compared to AI Driven companies. The comparison however cannot be extended to after series A because AI Core companies often get acquired or have an early exit compared to AI Driven companies.



The number of AI exits in the Netherlands is on the decline since 2018 after a steady rise over the previous four years.

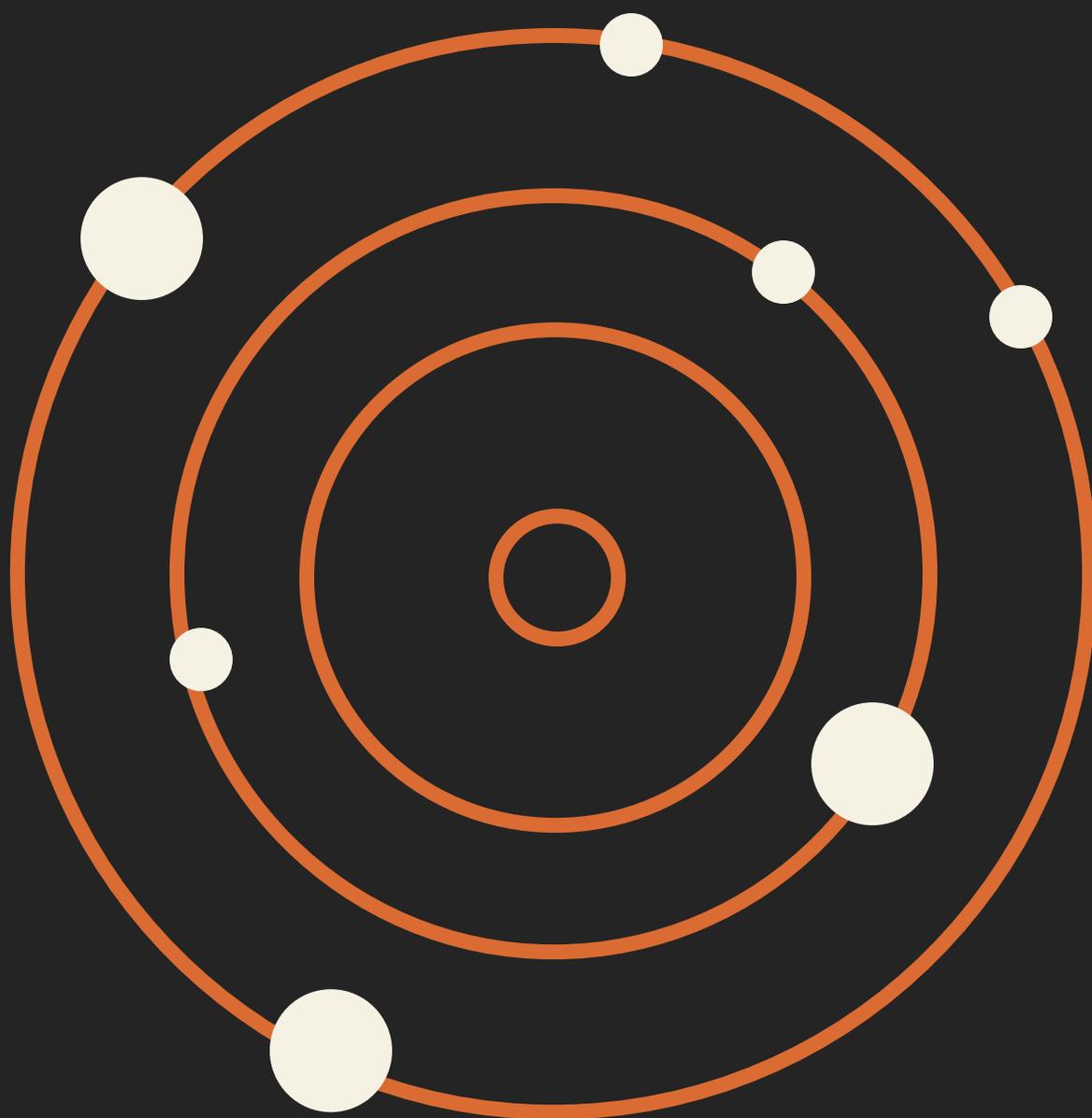
The United Kingdom by far has the largest number of exits and exit value compared to #2 France and #3 The Netherlands. Outside of Europe, Israel has seen the largest growth in the number of exits, climbing from 14 in 2015 to 29 in 2019.



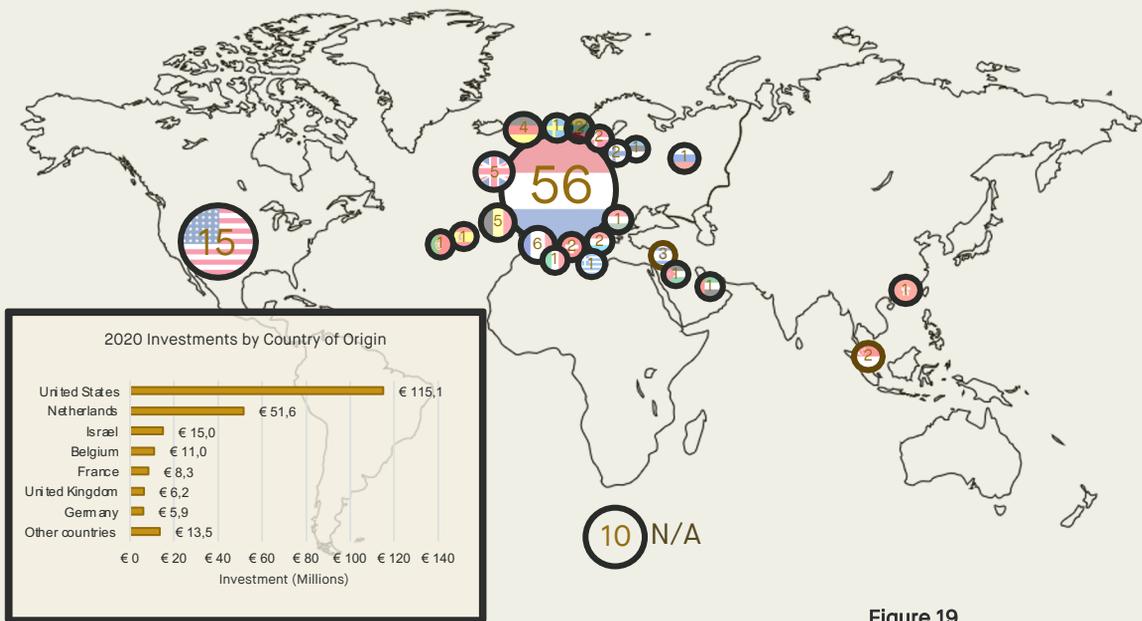
**Figure 17&18**  
Exits and exit value in AI companies within the last 5 years

4. Artificial Intelligence Report

# Investors



# 48% of Investors Originate from Abroad in 2020



**Figure 19**  
Number of Investors by Country of Provenance (Map) and 2020 Investment Totals (Chart)

This also demonstrates that international investors are generally individual in their investments in the Dutch ecosystem. With 38% of Dutch AI startups and scaleups having international investor presence indicates that the presence of an international investor is likely triggering additional future investor interest.

On average, Series A rounds with the presence of an international investor raise €6,5M whilst Dutch-only rounds raise €4M. Series B international rounds raise €24M and Dutch-only raise €14M.



**Figure 20 - 22**  
Total Yearly Investments by Investor Type (Left), Investment Totals Since 2011 (Upper Right) and Number of Investors (Lower Right)

2020 had a large share corresponding to Corporate Venturing with deals such as KPN ventures investment in EclecticIQ (€20M funding round total), Rabobank and Latham & Watkins' investment in Reynen Court (€4M funding round total) and Materialise, Midwest Prototyping and Miller Turner's investment on AM-Flow (€3,6M funding round total).

Artificial Intelligence Report

# How This Report Was Made



# About the Data

## Method

The data shown in this report was generated by the [Techleap Startup Finder](#), in partnership with [Dealroom.co](#), per 15 March 2021. The data was filtered using a query focussing on artificial intelligence startups with more than 1 employee, that weren't subsidiaries, agencies, closed, acquired or classified as being not meaningful ([see query](#)).

The data was further refined to fulfil the filter specifications by removing additional companies which were misclassified by automation.

Funding and financial values are based on funding round data based on diverse news and reporting websites. Web data is based on Similar Web data made available through their API, which allows the Finder to obtain information for websites with less than 100.000 yearly visits. Employee numbers are based on LinkedIn company profile pages.

## What is a Startup or a Scaleup?

We define startups and scaleups as innovative, scalable and often tech-enabled businesses by design. They often share some (not all) of the following characteristics:

- Tech-enabled
- High-growth (potential)
- Innovative by design
- Global ambitions
- Venture-backed
- Rapidly scaling or scalable

We disqualify companies founded earlier than the past twenty years and with only 1 employee and subsidiaries or companies that have been acquired or gone through an IPO (also known as "Exit" events).

Scaleups are (somewhat) older startups that achieve high levels of growth in employees or revenue.

An artificial intelligence startup or scaleup in this report refers to a company that, as part of its core operations, implements or develops artificial intelligence techniques.

## How Can You Be Included in This Data?

Don't fret if we haven't seen you yet! The startup scene is dynamic, and we do our best to make sure we capture the entire ecosystem in real-time.

In case you're not in our reports, or the Finder, and would like to be a part of our ecosystem just [register here](#) for free and simply add your company by adding a website and company name. You may also create an account for your company and become verified, allowing you to update information and modify details such as funding information.

Questions? Reach out to us on [data@techleap.nl](mailto:data@techleap.nl).

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