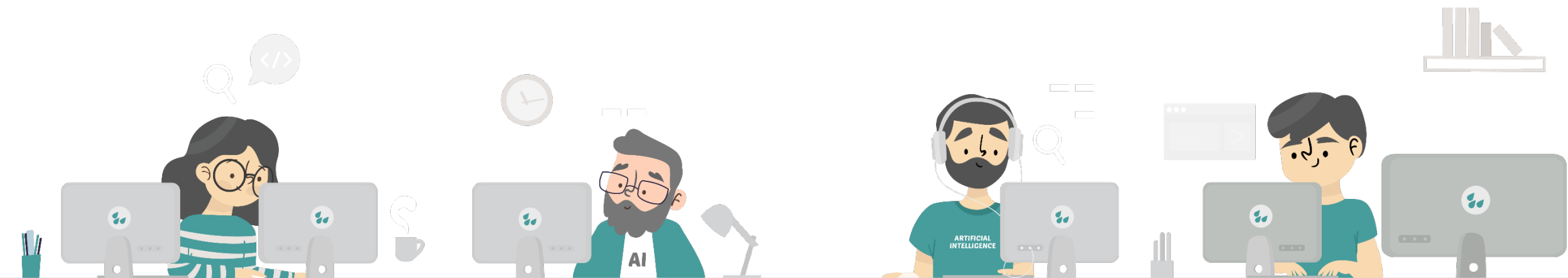


# Майбутнє України на світовій мапі штучного інтелекту

Краковецький Олександр

CEO at DevRain, Ph.D.



# Краковецький

# Олександр

CEO DevRain, Ph.D.

Microsoft Regional Director

Microsoft AI Most Valuable Professional

Microsoft Certified: Azure Data Scientist Associate

Microsoft Certified Trainer

The Best Professional in Software Architecture

(Ukrainian IT Awards)

[alex.krakovetskiy@gmail.com](mailto:alex.krakovetskiy@gmail.com)

<https://www.linkedin.com/in/sashaeve/>

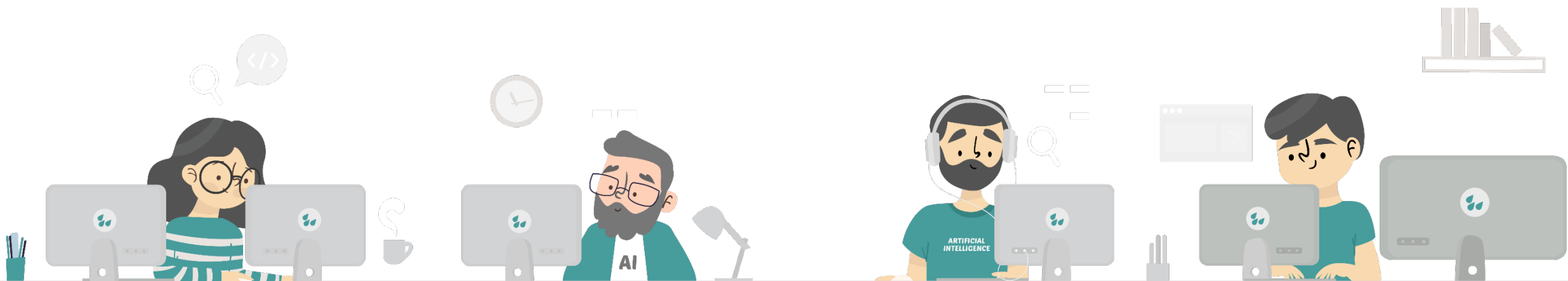
<https://www.facebook.com/oleksandr.krakovetskyi>

<https://twitter.com/sashaeve>



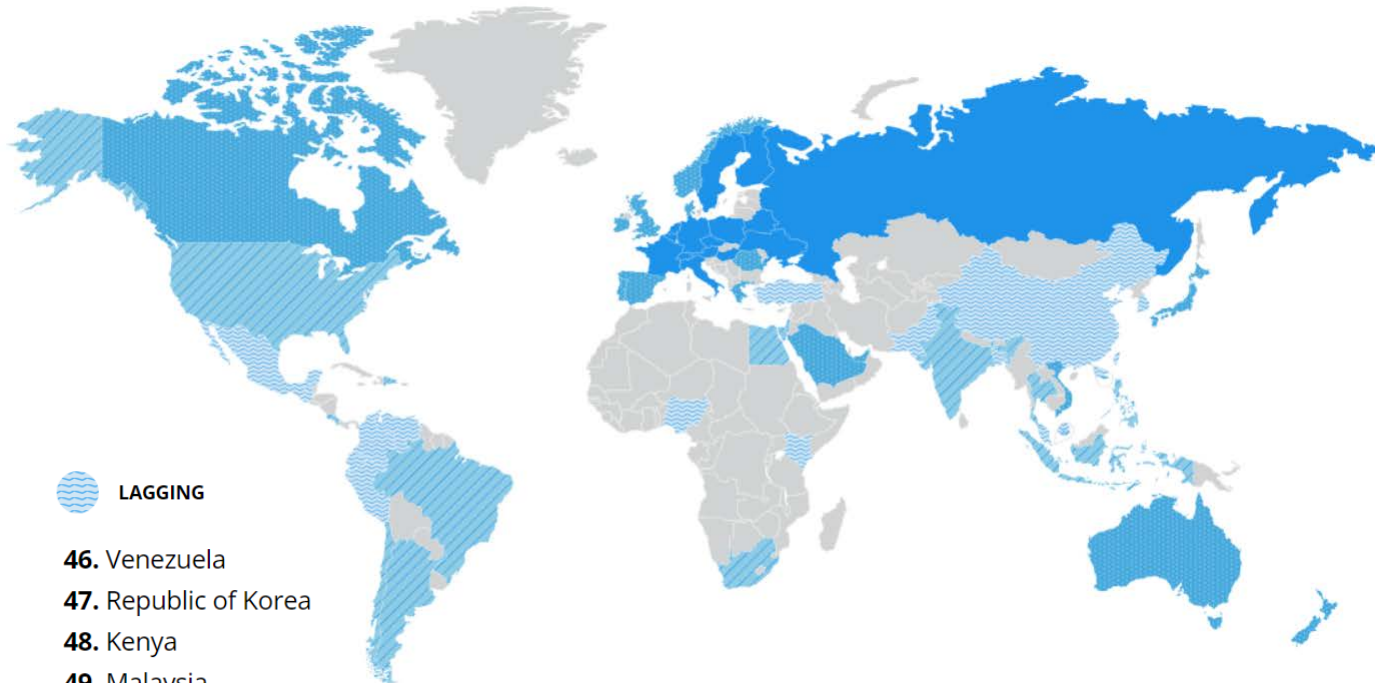
Microsoft  
Regional Directors

# Де ми знаходимось зараз?





# Global Skills Index (Technology)



## CUTTING-EDGE

1. Russia
2. Belarus
3. Switzerland
4. Ukraine
5. Finland
6. Netherlands
7. Italy
8. France
9. Belgium
10. Czech Republic
11. Austria
12. Germany
13. Sweden
14. Poland
15. Hungary

## COMPETITIVE

16. Norway
17. Denmark
18. Spain
19. New Zealand
20. Canada
21. Ireland
22. Vietnam
23. United Kingdom
24. Japan
25. Australia
26. Portugal
27. Romania
28. Saudi Arabia
29. Greece
30. United Arab Emirates

## EMERGING

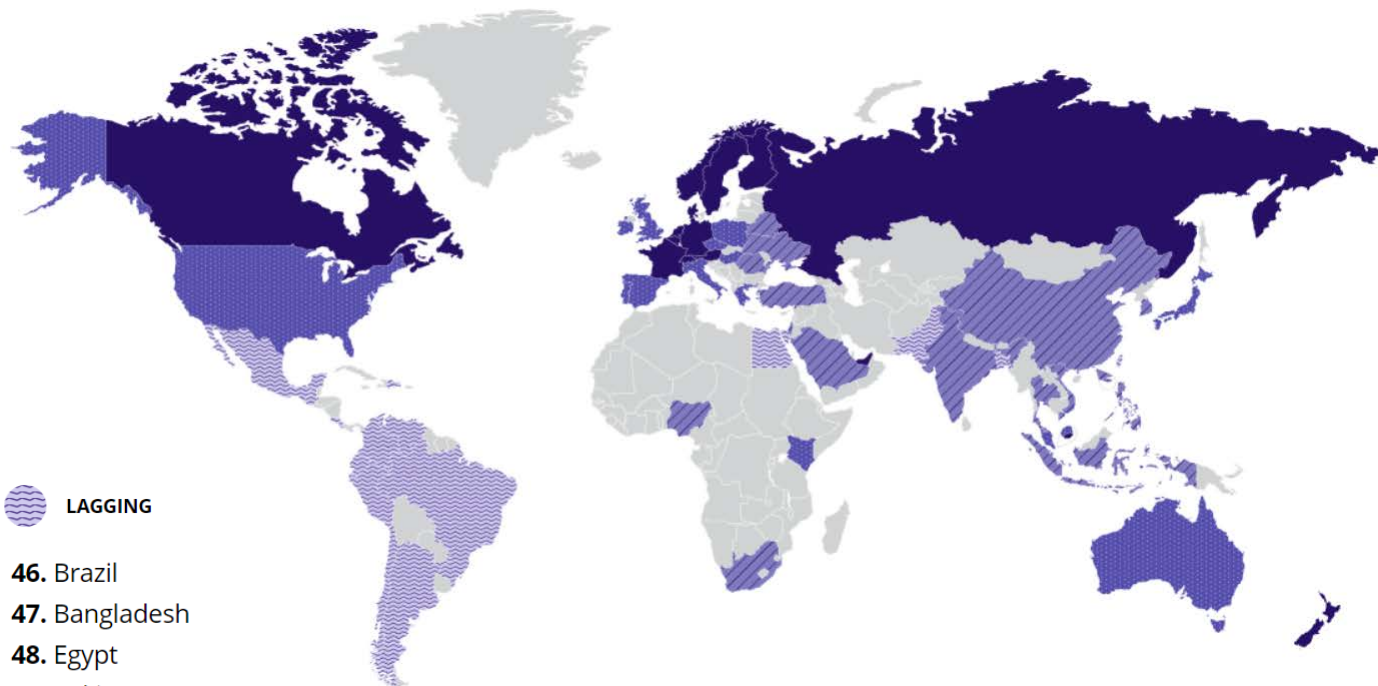
31. Indonesia
32. Hong Kong
33. South Africa
34. Israel
35. Singapore
36. Thailand
37. United States
38. Philippines
39. Egypt
40. India
41. Argentina
42. Brazil
43. Costa Rica
44. Chile
45. Dominican Republic

## LAGGING

46. Venezuela
47. Republic of Korea
48. Kenya
49. Malaysia
50. China
51. Colombia
52. Guatemala
53. Peru
54. Turkey
55. Taiwan
56. Ecuador
57. Bangladesh
58. Mexico
59. Pakistan
60. Nigeria



# Global Skills Index (Business)



**CUTTING-EDGE**

1. Switzerland
2. Austria
3. Denmark
4. Finland
5. United Arab Emirates
6. Norway
7. Germany
8. Belgium
9. Russia
10. Singapore
11. Sweden
12. France
13. New Zealand
14. Canada
15. Netherlands

**COMPETITIVE**

16. Italy
17. United States
18. Australia
19. United Kingdom
20. Czech Republic
21. Hong Kong
22. Ireland
23. Hungary
24. Poland
25. Greece
26. Portugal
27. Kenya
28. Japan
29. Malaysia
30. Spain

**EMERGING**

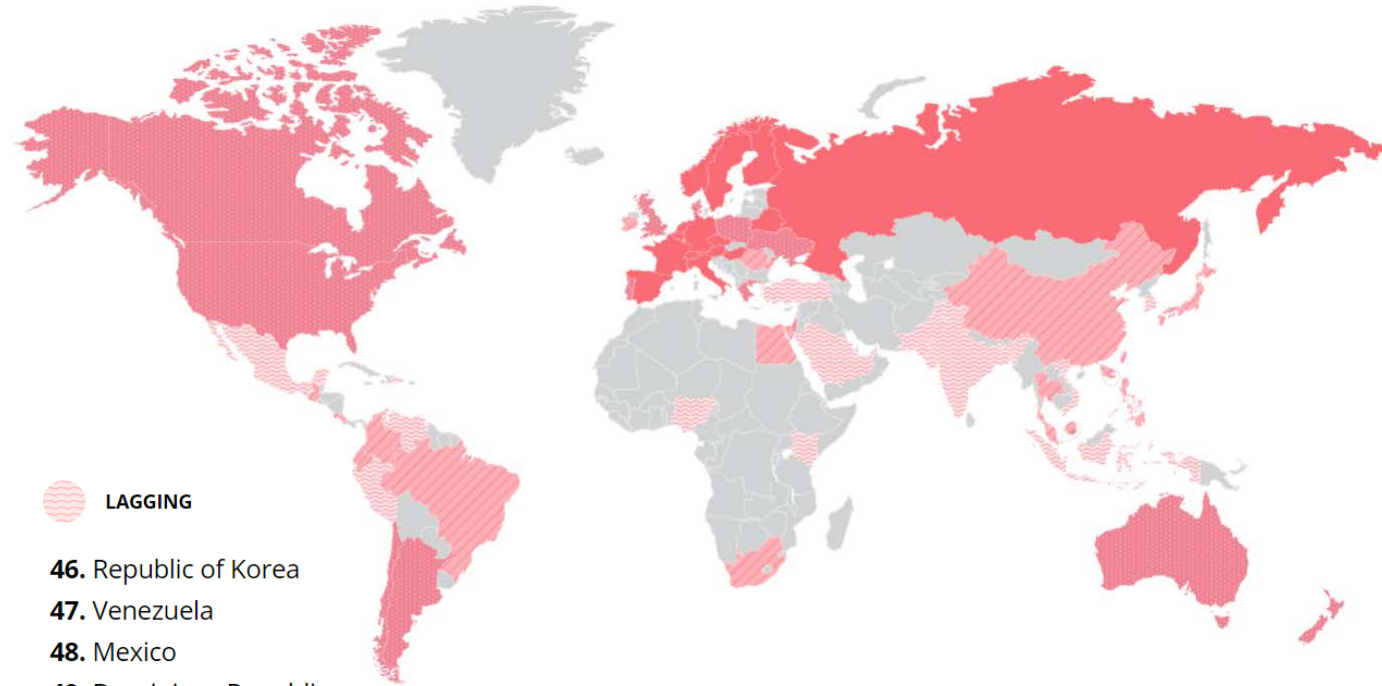
31. South Africa
32. Belarus
33. Vietnam
34. India
35. Israel
36. Romania
37. Philippines
38. Turkey
39. Nigeria
40. Thailand
41. Indonesia
42. Saudi Arabia
43. Ukraine
44. Republic of Korea
45. China

**LAGGING**

46. Brazil
47. Bangladesh
48. Egypt
49. Pakistan
50. Taiwan
51. Costa Rica
52. Chile
53. Argentina
54. Guatemala
55. Ecuador
56. Peru
57. Venezuela
58. Dominican Republic
59. Colombia
60. Mexico



# Global Skills Index (Data Science)



**CUTTING-EDGE**

1. Russia
2. Switzerland
3. Belgium
4. Austria
5. Finland
6. France
7. Germany
8. Belarus
9. Netherlands
10. Norway
11. Sweden
12. Spain
13. Hungary
14. Czech Republic
15. Italy

**COMPETITIVE**

16. Hong Kong
17. Singapore
18. Israel
19. Denmark
20. Poland
21. Canada
22. Argentina
23. United States
24. United Kingdom
25. New Zealand
26. Portugal
27. Greece
28. Australia
29. Ukraine
30. Chile

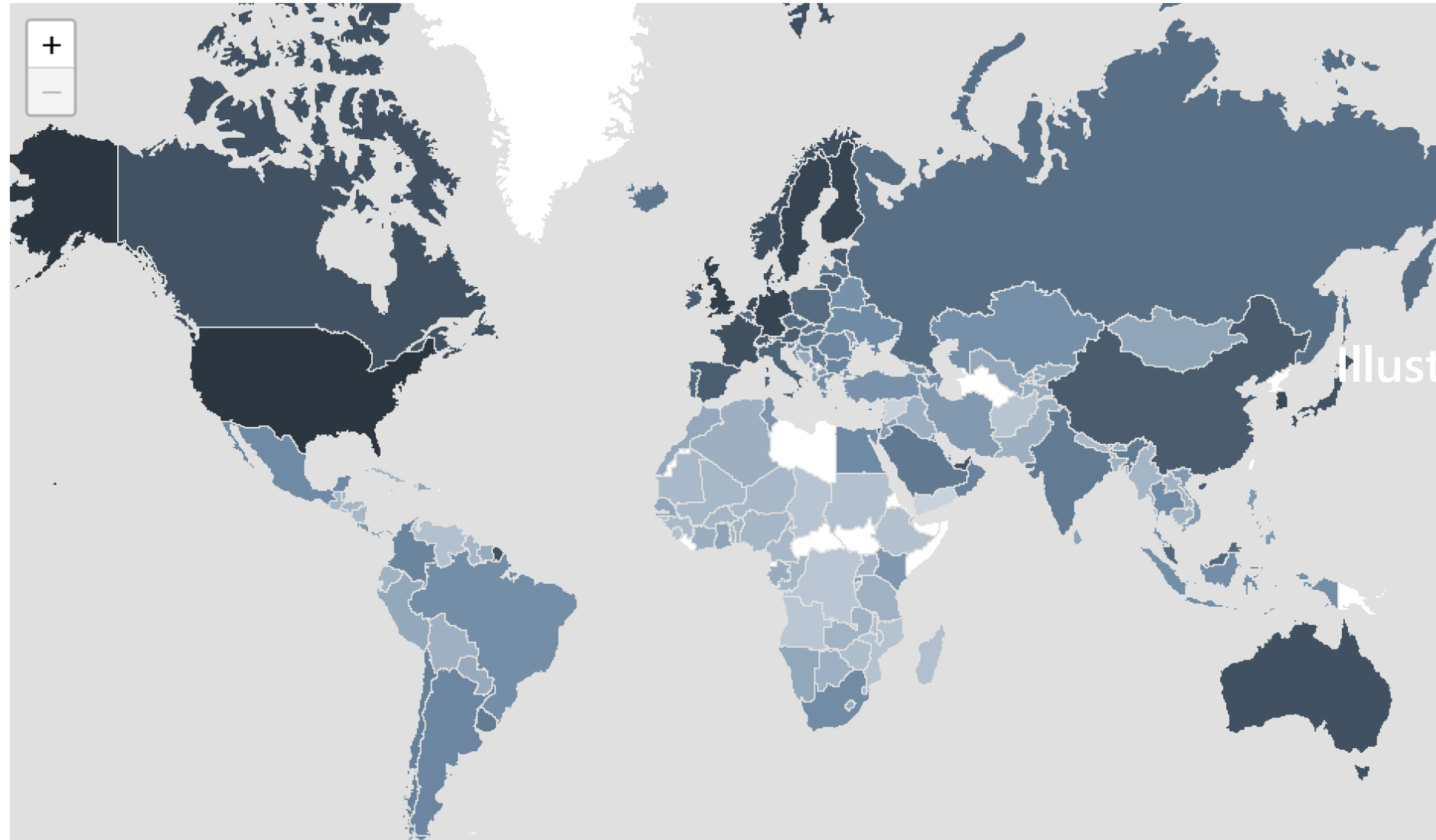
**EMERGING**

31. Philippines
32. Romania
33. Ireland
34. Guatemala
35. China
36. Ecuador
37. Costa Rica
38. Thailand
39. Brazil
40. Japan
41. Colombia
42. Taiwan
43. Malaysia
44. South Africa
45. Egypt

**LAGGING**

46. Republic of Korea
47. Venezuela
48. Mexico
49. Dominican Republic
50. United Arab Emirates
51. India
52. Peru
53. Vietnam
54. Saudi Arabia
55. Turkey
56. Indonesia
57. Bangladesh
58. Pakistan
59. Kenya
60. Nigeria

# Government AI Readiness Index 2020



All countries ranked by index

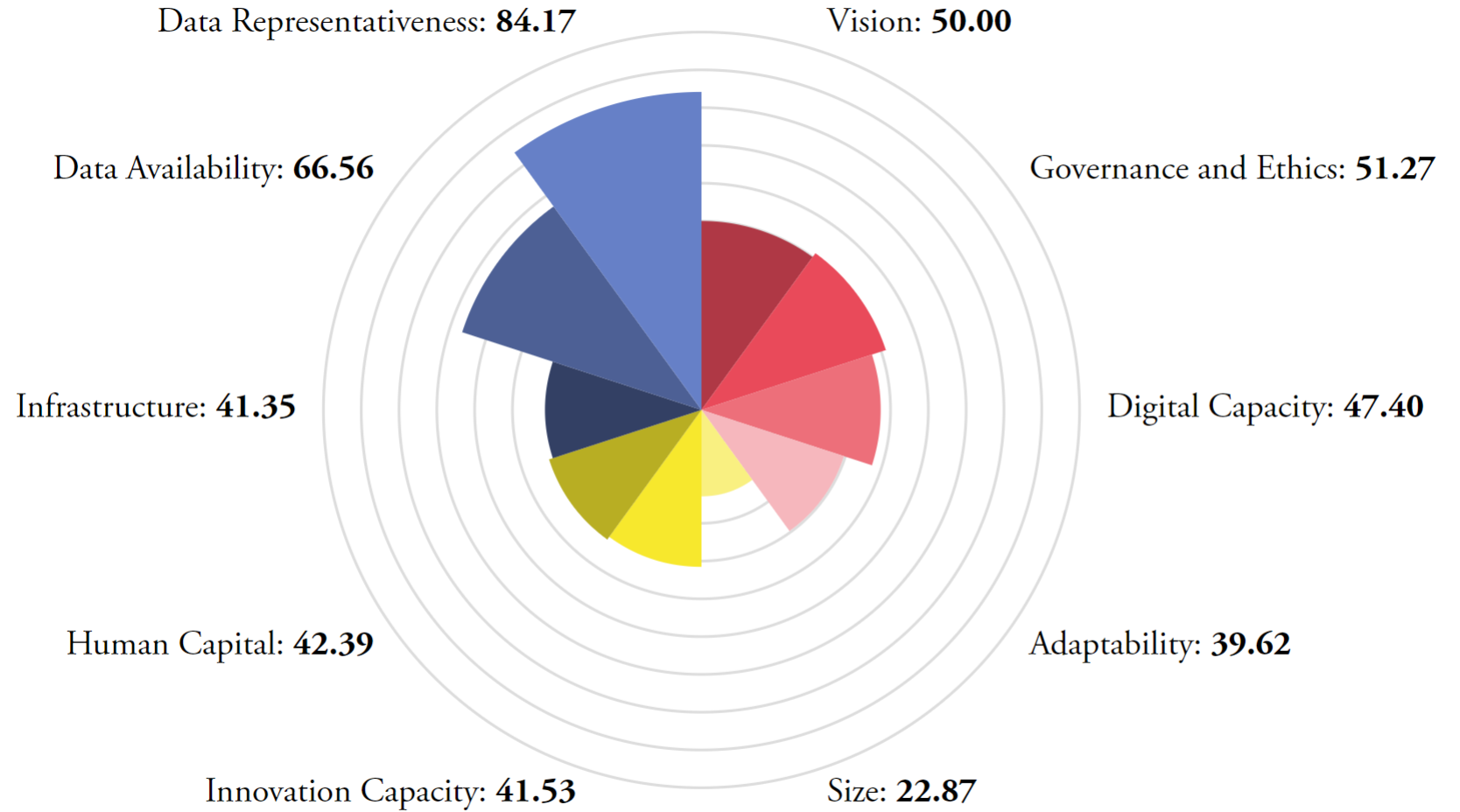
Rank	Country	Index
1	<a href="#">United States of America</a>	85.479
2	<a href="#">United Kingdom</a>	81.124
3	<a href="#">Finland</a>	79.238
4	<a href="#">Germany</a>	78.974
5	<a href="#">Sweden</a>	78.772
6	<a href="#">Singapore</a>	78.704
7	<a href="#">Republic of Korea</a>	77.695
8	<a href="#">Denmark</a>	75.618
9	<a href="#">Netherlands</a>	75.297
10	<a href="#">Norway</a>	74.430

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<https://www.oxfordinsights.com/government-ai-readiness-index-2020>

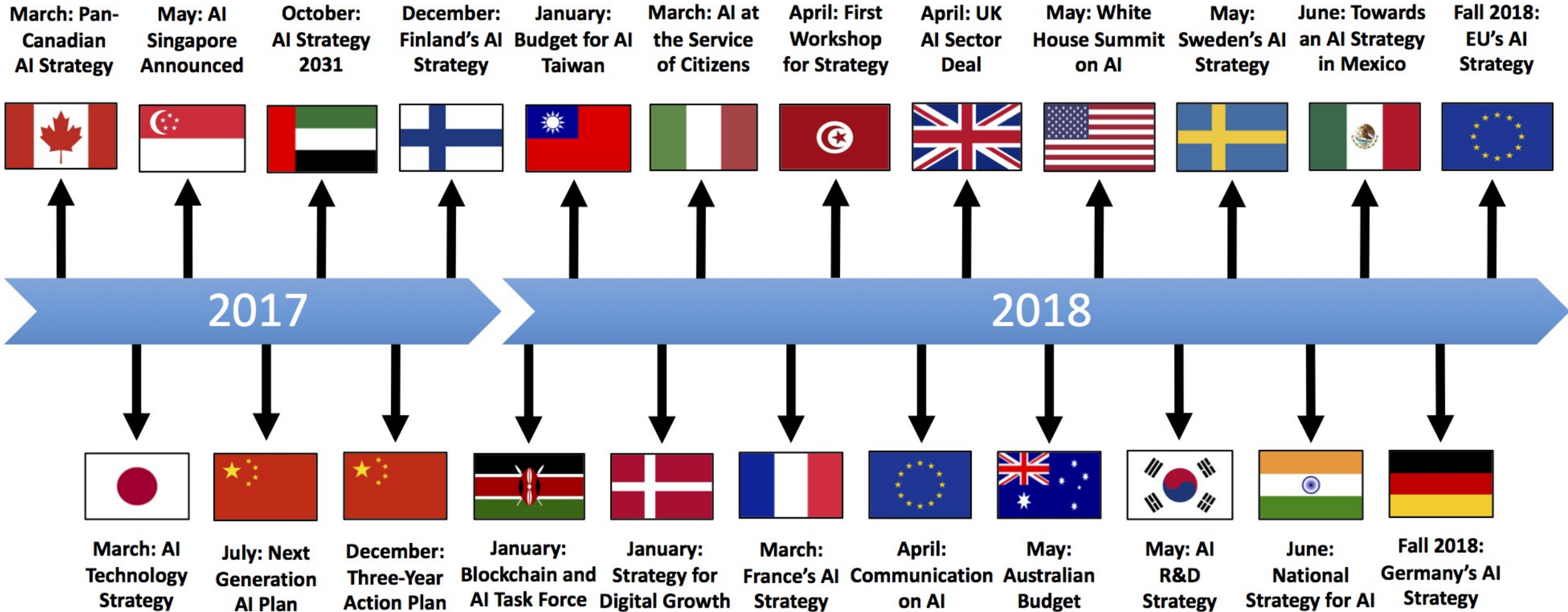
# Ukraine (Government AI Readiness Index 2020)

51	Colombia	51.262
52	Romania	50.782
53	Argentina	50.754
54	Kuwait	50.607
55	Mexico	49.358
56	Egypt	49.191
57	Ukraine	48.901
58	Croatia	48.615
59	South Africa	48.250
60	Thailand	48.156
61	Greece	47.933





# Artificial Intelligence Strategies





# Canada

1. First country to release a national AI strategy
2. **Pan-Canadian Artificial Intelligence Strategy** is a five-year, C\$125 million plan to invest in AI **research and talent**
3. <http://canada.ai/>





## China



Ambition to lead the world in AI theories, technologies, and applications in its July 2017 plan, **A Next Generation Artificial Intelligence Development Plan:**

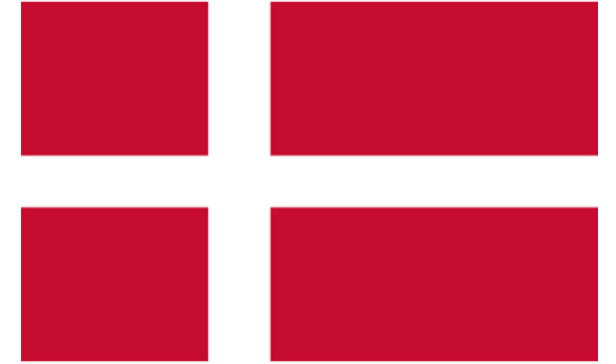
- Make AI industry “in-line” with competitors by 2020;
- reach “world-leading” in some AI fields by 2025;
- become the “primary” center for AI innovation by 2030.



# Denmark

**Strategy for Denmark's Digital Growth** (January 2018) aims to make Denmark a leader in the digital revolution and to create growth and wealth for all Danish people (strategy includes AI, big data, and the Internet of Things).

- **make Danish businesses the best** at using digital technologies;
- have the best conditions in place for the **digital transformation of business**;
- ensure every Dane is equipped with the necessary **digital skills** to compete.





Denmark



**OFFICE OF DENMARK'S TECH AMBASSADOR**  
*Silicon Valley | Copenhagen | Beijing*

**Companies like Google, Apple and  
Microsoft “affect Denmark just as  
much as entire countries”**

<http://techamb.um.dk>



## EU Commission

In April 2018, the EU Commission adopted the **Communication on Artificial Intelligence**: a 20-page document that lays out the EU's approach to AI.

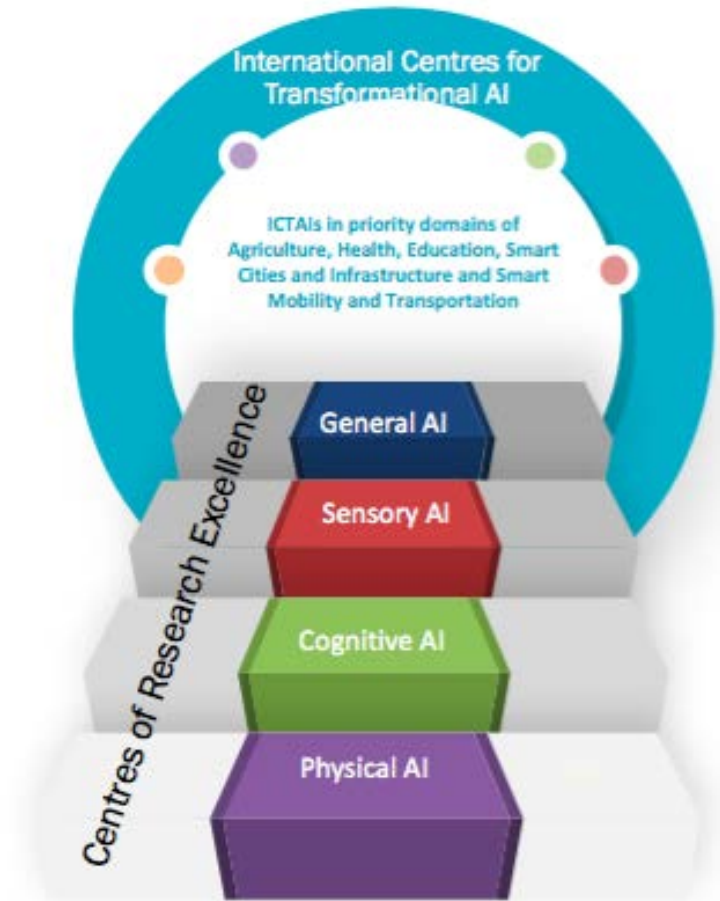
- increase the EU's technological and industrial capacity and AI uptake by the public and private sectors;
- prepare Europeans for the **socioeconomic changes** brought about by AI;
- ensure that an appropriate **ethical and legal framework** is in place.



# India

How India can leverage AI not only for economic growth, but also for social inclusion (#AIforAll).

- enhance and empower Indians with the **skills to find quality jobs**;
- invest in research and sectors that can **maximize economic growth** and **social impact**;
- **scale Indian-made AI solutions** to the rest of the developing world.

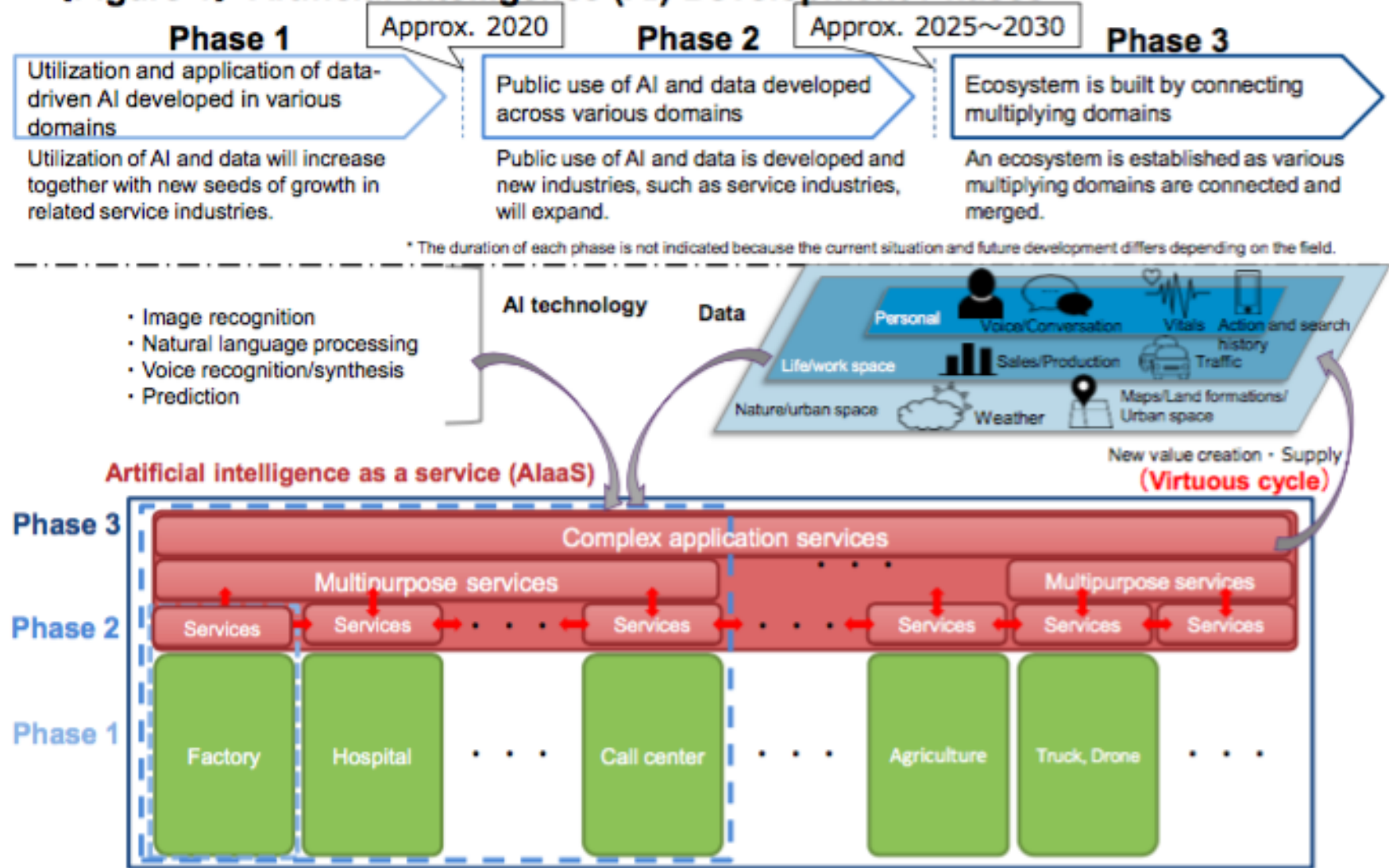




# Japan

Strategic Council for AI Technology was established to develop “research and development goals and a roadmap for the industrialization of artificial intelligence.”

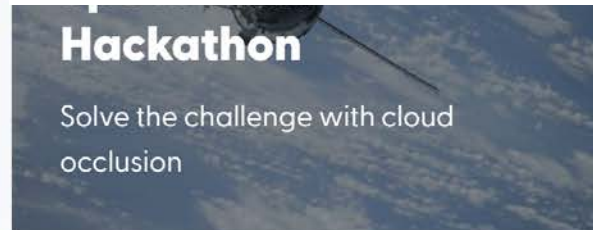
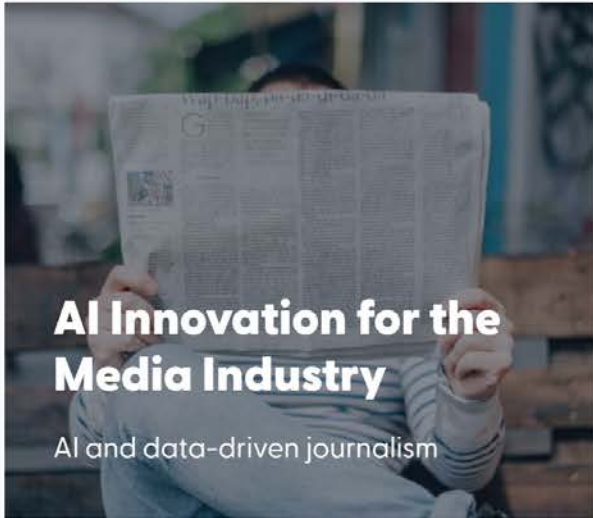
(Figure 1) Artificial Intelligence (AI) Development Phases





# The Data Factory

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Through the Data Factory we accelerate the development of AI in Sweden. The Data Factory comprises the technological infrastructure, data, legal frameworks and know-how of managing and accessing large and complex datasets. It enables our partners to donate or license data, access data and to use storage and compute power for AI projects.

Put in another way, the Data Factory provides the infrastructure, tool chains, user interfaces and datasets that are necessary to conduct the research and develop whatever solutions that the partners of AI Sweden desire.



Sweden

Projects

# Swedish Language Data Lab

---

A thoroughly developed base for Natural Language Processing (NLP) is one of the cornerstones of successful AI applications. NLP is one of AI Sweden's strategic areas, and the Swedish Language Data Lab was the first of our NLP projects initiated.

# Повідомлення про проведення публічного громадського обговорення проєкту розпорядження Кабінету Міністрів України «Про схвалення Концепції розвитку штучного інтелекту в Україні»

Опубліковано 14 серпня 2020 року о 10:57

Міністерство цифрової трансформації України та Microsoft почали співпрацю задля цифрової трансформації України

October 2, 2020 | CEE Multi-Country News Center



## Specialization

[Asia Pacific](#) [Artificial Intelligence](#)

# Singapore's national AI strategy to focus on chronic disease management and prevention

In the next three years, Selena+, a system which analyzes retinal photographs across the nation for diabetes screening will be deployed.



# Learning and Certification

- Coursera (English)
- Pluralsight (English)
- Microsoft Learn (English)
- Google AI (English)
- Deeplearning.ai (English)
- Elements of AI (English)

<p><b>Віталій Мокін</b> Пропозиція включити «відсутність національних он- лайн ресурсів з акумулювання досвіду саме українських вчених і дослідників у сфері ІІІ та їх оглядами найновіших світових здобутків у сфері ІІІ державною мовою»</p>	<p>Не враховувати</p>	<p>Немає сенсу мати окрему платформу для поширення досвіду у сфері ІІІ, коли існують міжнародні платформи. Така окрема українська платформа завжди буде вторинною по відношенню до міжнародних.</p>
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[Methods](#)

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# Evaluation of a Tree-based Pipeline Optimization Tool for Automating Data Science

20 Mar 2016 • [Randal S. Olson](#) • [Nathan Bartley](#) • [Ryan J. Urbanowicz](#) • [Jason H. Moore](#)

As the field of data science continues to grow, there will be an ever-increasing demand for tools that make machine learning accessible to non-experts. In this paper, we introduce the concept of tree-based pipeline optimization for automating one of the most tedious parts of machine learning---pipeline design... [\(read more\)](#)



PDF



Abstract

## Code

Edit

[rhiever/tpot](#) official

★ 7,538

[jim-schwoebel/allie](#)

★ 43

[DataCanvasIO/Hypernets](#)

★ 24



## Tasks

Edit

AUTOMATED FEATURE ENGINEERING

AUTOML

HYPERPARAMETER OPTIMIZATION

NEURAL ARCHITECTURE SEARCH



# Partnership with global tech corporations



The screenshot shows the Microsoft Azure Machine Learning studio interface. The top navigation bar includes 'Preview' and 'Microsoft Azure Machine Learning'. The left sidebar contains a navigation menu with options like 'New', 'Home', 'Author', 'Notebooks', 'Automated ML', 'Designer', 'Assets', 'Datasets', 'Experiments', 'Pipelines', 'Models', 'Endpoints', 'Manage', 'Compute', 'Datastores', and 'Data labeling'. The main content area is titled 'Welcome to the studio!' and features three primary action cards: 'Create new', 'Notebooks', 'Automated ML', and 'Designer'. Below these are sections for 'My recent resources', 'Runs', 'Compute', and 'Tutorials'. The 'Runs' section contains a table of recent experiments, and the 'Compute' section contains a table of compute targets.

Run number	Experiment	Updated time	Status
55	clothing_sentiment	October 16, 2019 7:09 ...	Completed
56	clothing_sentiment	October 16, 2019 6:02 ...	Completed
28	clothing_sentiment	October 16, 2019 5:21 ...	Completed
29	clothing_sentiment	October 16, 2019 4:14 ...	Completed
55	absa_hyperdrive	October 15, 2019 1:51 ...	Completed

Name	Type	Provisioning state	Created on
visual-ner	Machine Learning Com...	Succeeded (0 nodes)	June 16, 2019 1:39 PM



# Partnership with global tech corporations

search within these results

current selections

× Program Type: Grants & Fellowships

## Program Type

[Programs \(4\)](#)

## Region

[North America \(2\)](#)

[Worldwide \(2\)](#)

[South America \(1\)](#)

## Published Date

[Past Year \(1\)](#)

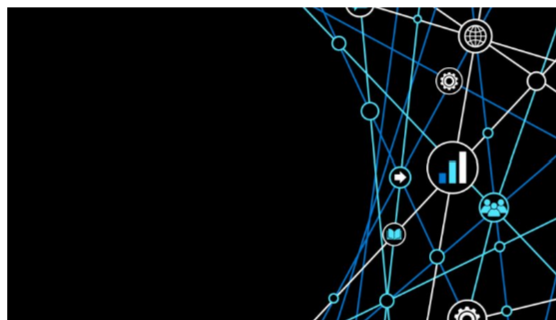
custom range:

 to 

ACADEMIC PROGRAM

## [Microsoft Security AI RFP >](#)

What it is Funding for collaborative research between Microsoft and universities working together to make advances in artificial intelligence to solve computing security problems. Deadline The proposal period has now closed.



ACADEMIC PROGRAM

## [Microsoft Productivity Research >](#)

What it is Funding for collaborative research between Microsoft and universities working together to invent the future of productivity. How to apply The application period has now closed.



ACADEMIC PROGRAM

## [Microsoft Investigator Fellowship >](#)

Microsoft Investigator Fellowship is a two-year fellowship that recognizes higher education faculty in North America whose exceptional talent identifies them as distinguished scientists and teachers.





## Partnership with global tech corporations

### AI for Good Idea Challenge winners for 2019

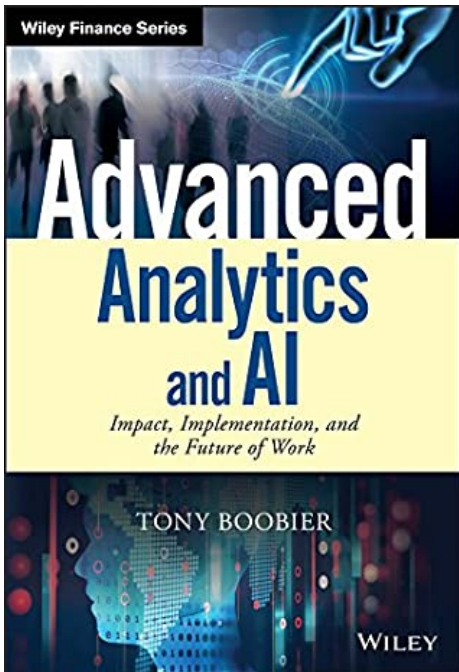
Learn more about how these projects are using AI to advance improvements in accessibility and sustainability.



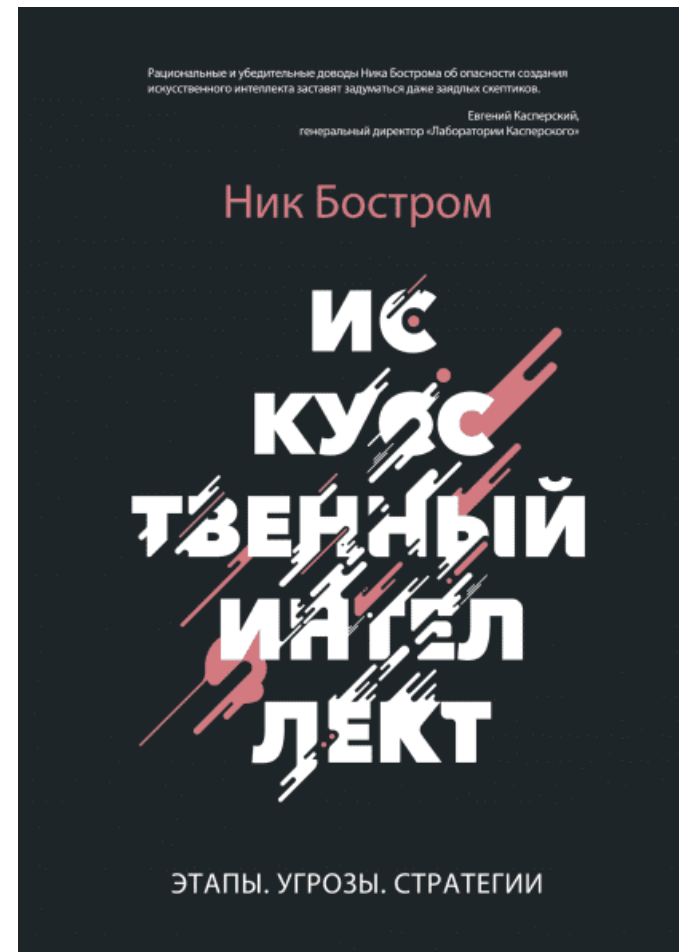
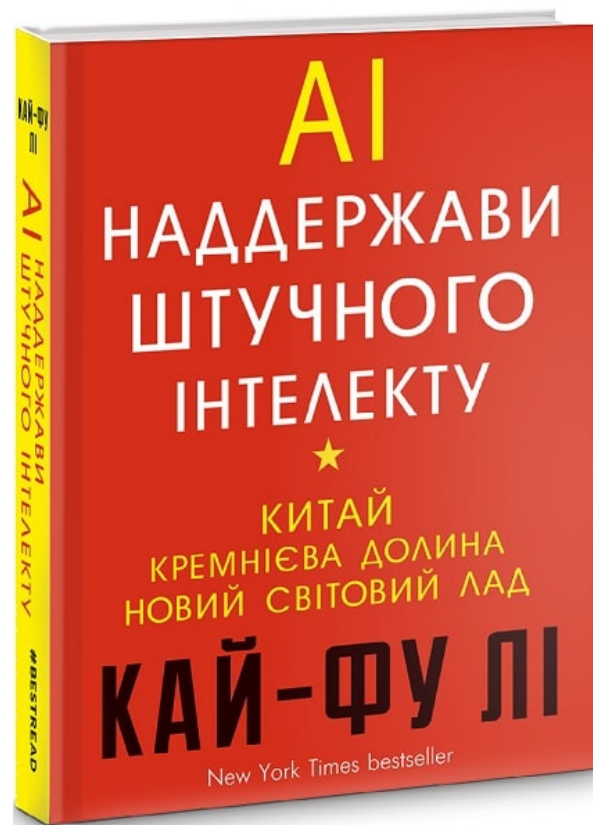
FIRST PLACE

### CardioVision

Bohdan Petryshak and a student team at Ukrainian Catholic University developed CardioVision, an application that helps doctors classify CT scans and MPR images of arteries. By detecting coronary artery defects up to three times faster, patients are equipped for better heart attack prevention.



devrain.com





Сщтефс

## Oleksandr Krakovetskyi

CEO DevRain, Ph.D.

[Alex.Krakovetskiy@gmail.com](mailto:Alex.Krakovetskiy@gmail.com)

<https://www.facebook.com/oleksandr.krakovetskyi>

<https://www.linkedin.com/in/sashaeve/>

