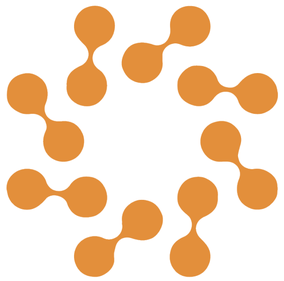


ICAI

Innovation Center for Artificial Intelligence

Fostering University-Society Collaborations

Maarten de Rijke

University of Amsterdam

Why?

In an open society, pervasive technological power should be in the hands of many, not of a few

Let's make AI for everyone

Shared ownership of AI innovation agendas

AI to support human intelligence

Bring different voices to the table

Core building block: ICAI lab

What is an ICAI lab?

At least five PhD students

Built around shared multi-stakeholder research agenda in AI

Emphasis on co-productions and knowledge transfer

Lab manager (usually at the assistant prof. level)

...

What is an ICAI lab?

...

One or more knowledge institutes

One or more non-academic funders, with a five-year contract

PhD students spend one or two days a week at partner site

Emphasis on fundamental research, not product development

Publish and share openly

ICAI labs give back

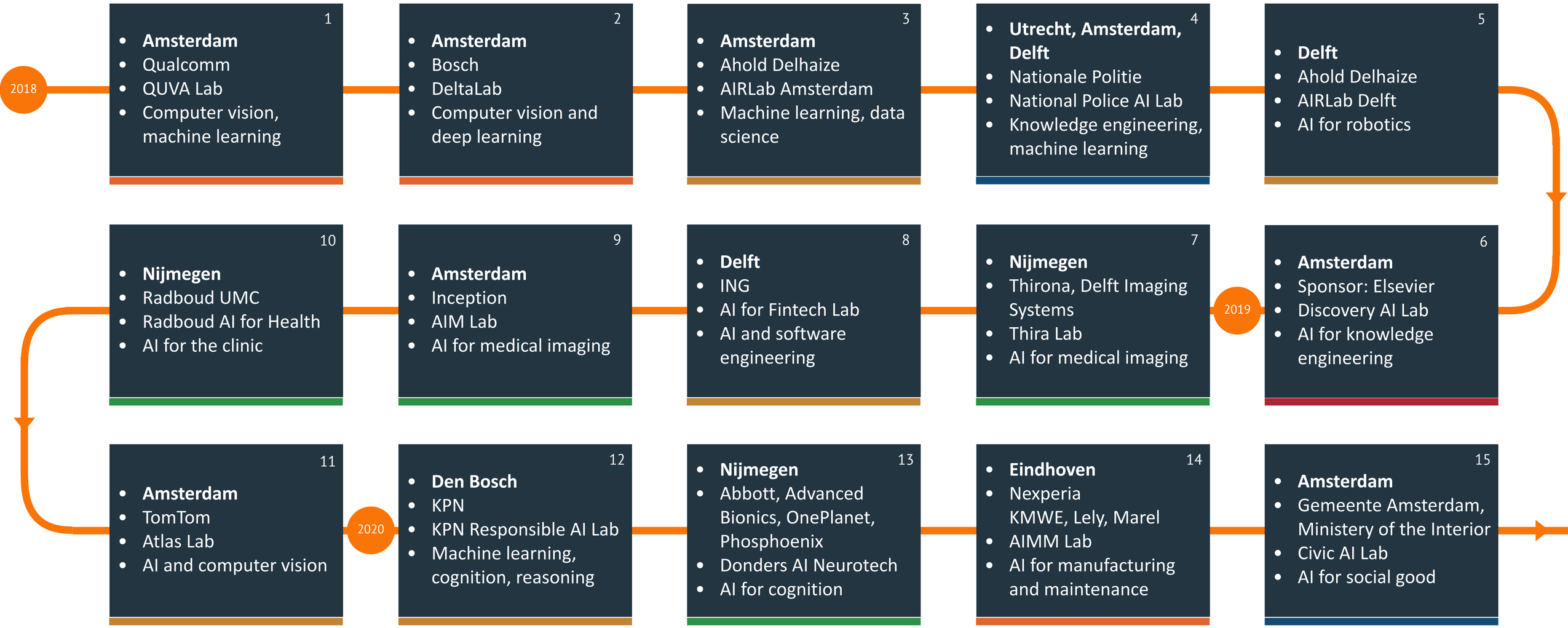
To their local ecosystems (clinics, training programs, ...)

To the national ecosystem (meetups, deep dives, ...)

To teaching, supervision, dissemination, policy, ...

Share knowledge outside labs
Attract senior talent to NL
Share lessons between labs
Retain talent for NL
Connect labs and talent to startups

Where are we today?



Food (SDG 2) Health (SDG 3) Education (SDG 4) Energy (SDG 7) Industry & infrastructure (SDG 9) Mobility (SDG 11) Services (SDG 12) Institutions (SDG 16)

16
- **Wageningen**
- OnePlanet
- AI for Agro-food Lab
- AI for smart food production

17
- **Amsterdam**
- KB, Rijksmuseum, Sound & Vision
- Cultural AI Lab
- AI for culture

2021

18
- **Delft**
- DSM
- AI for Bioscience Lab
- AI for biogases products

19
- **Eindhoven**
- Lely, Rademaker, Diversey, ExRobotics, Vanderlande
- EASI FAST Lab
- Safe mobile robotics

20
- **Eindhoven**
- NXP Semiconductors
- EASI Mobility Lab
- AI for accident-free mobility

21
- **Nijmegen, Wageningen**
- Nine industrial partners
- AI for Precision Health, Nutrition & Behavior
- AI for personalized support

22
- **Eindhoven**
- Philips
- e/MTIC AI-Lab
- Personalized treatments

23
- **Utrecht**
- ProRail, NS, Qbuzz
- Utrecht AI & Mobility Lab
- AI for planning and early warning

24
- **Nijmegen**
- OnePlanet
- AI-RONDO
- AI for risk profiling and decision support

25
- **Amsterdam**
- NKI
- AI for Oncology Lab
- AI for improving cancer treatment

26
- **Amsterdam, Delft**
- Booking.com
- Mercury Machine Learning Lab
- Learning from controlled sources

27
- **Tilburg**
- 13 partners
- MasterMinds Lab
- AI for serious gaming and tutoring

2022

28
- **Amsterdam**
- NKI, Elekta
- POP-AART
- AI for radiation treatment

29
- **Maastricht**
- Ilinonix
- Brightlands Smart Health Lab
- Personalized health

30
- **Eindhoven**
- GN Hearing
- FEP Lab
- AI for human hearing

Food (SDG 2) Health (SDG 3) Education (SDG 4) Energy (SDG 7) Industry & infrastructure (SDG 9) Mobility (SDG 11) Services (SDG 12) Institutions (SDG 16)

31
- **Delft, Utrecht**
- NS, ProRail
- RAIL Lab
- AI for logistic capacity

32
- **Amsterdam**
- NXP
- AI-Fair Lab
- AI for automotive imaging

33
- **Leiden**
- Philips
- AI4MRI Lab
- AI for optimizing magnetic resonance imaging

34
- **Delft, Enschede, Nijmegen**
- Alliander
- AI for Energy Grids Lab
- AI for electricity grids

2023

35
- **Delft, Maastricht**
- DSM, Kickstart AI
- Genius Lab
- AI for semantic knowledge engineering

36
- **Amsterdam, Den Bosch**
- DPG Media
- REM Lab
- AI for news media

37
- **Rotterdam**
- Philips
- ICAI Stroke Lab
- AI for the patient journey

38
- **Leiden**
- GE Healthcare
- Trustworthy AI for Magnetic Resonance Imaging Lab
- AI for MRI

39
- **Den Bosch**
- Deloitte
- Safeguard Lab
- AI for auditing enterprise systems

40
- **Den Bosch**
- Seven partners
- Ilustre Lab
- AI for energy transition

41
- **Nijmegen**
- Verily
- AI for Parkinson Lab
- AI for interpreting sensory and biomarker data

42
- **Nijmegen**
- MeVis
- MERAI Lab
- AI for interpreting imaging in oncology

43
- **Nijmegen**
- ASMPT
- ASM ICAI Lab
- AI for high-throughput data streams

44
- **Amsterdam, Nijmegen**
- Abbott
- CARA Lab
- AI for cardiology

45
- **Enschede, Groningen, Nijmegen**
- Siemens
- HealthyAI Lab
- AI to support prostate cancer diagnosis

Food (SDG 2) Health (SDG 3) Education (SDG 4) Energy (SDG 7) Industry & infrastructure (SDG 9) Mobility (SDG 11) Services (SDG 12) Institutions (SDG 16)

46

- **Amsterdam, Maastricht**
- RTL
- TAIM Lab
- AI for TV

47

- **Amsterdam**
- NFI
- AI4Forensics Lab
- AI for forensic data

48

- **Amsterdam, Leiden**
- AUMC, LUMC
- Explainable AI for Health Lab
- AI for clinical decision support

49

- **Delft, Rotterdam**
- SAS Institute
- REAiHL Lab
- AI to improve healthcare outcomes

50

- **Leiden, Utrecht**
- Inspectorates
- AI4Oversight Lab
- AI-driven methods for oversight

2024

51

- **Delft**
- JetBrains
- AI4SE Lab
- AI for software engineering

Food (SDG 2) Health (SDG 3) Education (SDG 4) Energy (SDG 7) Industry & infrastructure (SDG 9) Mobility (SDG 11) Services (SDG 12) Institutions (SDG 16)

An ecosystem of labs

300+ PhD students

51 labs

150+ partners

Across the Netherlands

Lessons learned

Lessons learned

It’s not about transactions, but about transformations

Content first – funding and legal later

Make sure non-academic partners have data and potential for uptake

Be patient: establishing a new lab may take up to two years

Be really clear to PhD students about expectations

…

Lessons learned

...

Aligning short-term and long-term agendas is hard

Optimize and adjust combinations of talent and knowledge development

Over-invest in communication within a lab and between lab partners

Plan for change

Foster local ownership

Keep the team small, but not too small

ICAI team

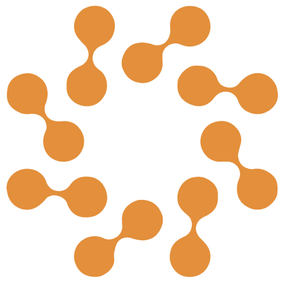
Communication	Benedicta Badu
Community	Ciara Snijders
Program assistant	Petra Best
ROBUST program manager	Katerina Makrogamvraki
Finance	Laura Davoli
Business director	Esther Smit
Scientific director	Maarten de Rijke

Strategic questions and challenges

Strategic questions

- Economy cooling down
- Knowledge security
- Anti-immigration trends
- Regulate vs. innovate
- Compute resources
- Substantiating the sustainable development goals
- Creating cross-overs between labs

Thank you!



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