Meet the Dutch Delegation

Innovation Mission to the United Kingdom

Neuromorphic Computing

24-27 March 2025

Netherlands

Foreword

Neuromorphic computing has tremendous potential for very fast and extremely energy-efficient data processing. Artificial Intelligence has made huge advances, making machines increasingly capable of performing human tasks. Neuromorphic technologies promise to further accelerate this progress, as we can now design electronic systems that are inspired by the workings of the human brain. The Netherlands aims to establish itself as a frontrunner in neuromorphic technologies.

Frits Grotenhuis

The Netherlands' starting position is strong because of its excellent academic reputation in AI, neuroscience and computational modelling. Many talented researchers work at Dutch universities and research institutes, doing pioneering work in neuromorphic computing. The Netherlands also has an excellent ecosystem with several startups already entering the market. In addition, the Netherlands has a strong tradition of public-private partnerships in digitalisation and information technology. The UK also has a leading ecosystem in neuromorphic computing, with top universities, innovative startups, and strong industry collaborations, making the UK an ideal partner for knowledge exchange and collaboration.

As part of the Dutch government's Mission-driven Top Sectors and Innovation Policy, Top Sector ICT fully supports this innovation mission. We support companies, government agencies and knowledge institutions to realize ICT innovations through knowledge exchange and close cooperation. Neuromorphic Technologies is one of the seven Digital and Information Technologies (DITs) considered crucial for economic growth, competitiveness and innovation within the Knowledge and Innovation Agenda Digitalisation (KIA Digitalisation) that Top Sector ICT coordinates. Furthermore, we explore the alignment of Neuromorphic Computing within the Action Agenda AI and Data as part of the National Technology Strategy of the Dutch government.

We are proud to support a delegation that is well balanced with participants from universities, research institutes, companies, and governmental representatives. This mission illustrates how we create further visibility for this exciting and emerging topic – a topic both countries can benefit from by working together!

Frits Grotenhuis
Director Top Sector ICT

Index

Foreword

Delegation

Organization

Delegation

Axelera AI

We are creating the future of Edge AI with industry-leading performance, usability, and efficiency at a fraction of the cost of existing solutions. Our unique implementation based on in memory computing and dataflow architecture based on RiscV. We are interested in innovation on exotic memories and new quantisation techniques.

Giuseppe Garcea
Director of Silicon & Co-Founder

High Tech Campus 5
5656 AE Eindhoven
The Netherlands

+31615543664
giuseppe.garcea@axelera.ai
https://www.axelera.ai/

BRAINS – University of Twente

The Center for Brain-Inspired Nano Systems (BRAINS) of the University of Twente was established in 2018, combining core expertise in nanoscience and nanotechnology with expertise from computer science, applied mathematics, artificial intelligence and neuroscience, to lay the scientific foundations for a new generation of powerful, energy-efficient computing hardware. Artificial and biological neural networks, in particular the brain, form a main inspiration. It is our ambition to understand the key features underlying the functioning of the brain, and translate those into hardware. Our research focuses on neuromorphic computing in the broadest sense. We look at the connection between our hardware and conventional (CMOS) electronics, and at the interface with biological systems. Societal implications and philosophical aspects are studied. The center aims to provide coherence and visibility. With its focus and critical mass BRAINS hopes to be a valuable partner in national and international consortia.

Wilfred G. van der Wiel
Co-director BRAINS/
Professor of
Nanoelectronics

Drienerlolaan 5
7522 NB Enschede
The Netherlands

+31630182641
w.g.vanderwiel@utwente.nl
https://www.utwente.nl/brains

Delft University of Technology

Computer Engineering at the Delft University of Technology targets the invention, the design, the prototyping and the demonstration of disruptive computing accelerators/engines by making use of unique features provided by emerging technologies and devices. Our research considers a wide range of energy-constrained (edge) applications, including AI, such as personalized healthcare and smart environments. We adopt a holistic approach considering the entire design stack (i.e., device technology, circuit design, architectures, tools, dedicated algorithms and applications), to maximize the computational efficiency, but also to further push the quality of our research. The main focus is on the middle layers (circuit design, architectures and tools including compilers) with their dependability aspects such as testability and design-for-testability, reliability, security, etc. Such technology aware system design approach enables hybrid solutions for neuromorphic computing, approximate computing, computation-in-memory, spin-wave computing, novel hardware architectures for Artificial Intelligence and hardware dependability by design.

Georgi Gaydadjiev
Professor in Computer Architecture

Mekelweg 4
2628 CD Delft
The Netherlands

+31612662156
g.n.gaydadjiev@tudelft.nl
https://www.tudelft.nl

Hoursec

The demand for Artificial Intelligence is outpacing computing performance capabilities and energy supply required for ever-increasing GPU power. Hoursec's technology combines AI inference and training on the same chip to accelerate computation by up to 3,000 times compared to other solutions, with 80% less training data required. Our novel network architecture and data handling techniques, combined with more efficient hardware and software implementation opens a wide range of opportunities for real-time data processing, error correction, and inference while saving valuable energy.

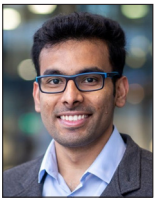
Alexandra Pinto
Founder & CEO

Elektronicaweg 10
2628 XG Delft
The Netherlands

+31642371011
alexandra.pinto@hoursec.tech
http://hoursec.tech/

Imec

IMEC performs world-leading research in nano-electronics and nano-technology in global partnerships in ICT, healthcare and energy in order to deliver industry relevant solutions. With its staff of more than 2,000 people including industrial residents and guest researchers, IMEC focuses on those domains where it sees a growth potential and where it can differentiate itself from other research institutes. Stitching IMEC Nederland (IMEC-NL) is located at the High Tech Campus in Eindhoven, in The Netherlands, and is part of Holst Centre, an independent open-innovation R&D centre that develops technologies for Thin-Film Flexible electronics, wearable, as well as sensors solutions for IoT.



Kanishkan Vadivel
Neuromorphic
Researcher

High tech campus 31
5656 AE Eindhoven
The Netherlands

+31685166010
kanishkan.vadivel@imec.nl
https://www.imec-int.com/en/the-netherlands

Innatera Nanosystems

Innatera is at the forefront of a new era of ambient intelligence, delivering unmatched efficiency and responsiveness. We've developed the world's first ultra-efficient neuromorphic microprocessor, inspired by the human brain, to process data right at the sensor node. This approach reduces the need for energy-intensive cloud routes, enabling real-time, ultra low-power computation that also safeguards privacy.

This technology's promise aligns closely with the UK's ambition to be part of the global AI revolution. As the UK accelerates its investments in next-generation AI technologies and builds a framework for smart infrastructure, our solutions offer a pathway to unparalleled efficiency and sustainability. By reducing dependence on energy-intensive cloud computing and enabling secure, low-latency edge processing, we address key challenges such as energy costs, carbon emissions, and data sovereignty—critical to both industry and society. From autonomous systems in advanced manufacturing to adaptive healthcare devices and intelligent environmental monitoring, our technology enables the UK to unlock the full potential of ambient intelligence while meeting its sustainability goals.

Shreyas Derashri
Chief Commercial Officer

Lange Kleiweg 40
2288 GK Rijswijk
The Netherlands

+447709194453
shreyas.derashri@innatera.com
https://www.innatera.com

Ministry of Economic Affairs

Ministry of Economic Affairs

The Innovation and Knowledge (I&K) directorate is responsible for an effective innovation & knowledge policy. It does so by working on further growth of public and private investments, by using national and international instruments more effectively and by encouraging companies to invest more in knowledge and innovation. I&K works closely together with other departments, knowledge institutes and businesses to stimulate innovations for social challenges. It also coordinates the Dutch contribution to European knowledge and innovation policy.

Tjerk Opmeer
Director Innovation and Knowledge

Roel Bruinsma
Policy Advisor Directorate Innovation and Knowledge

- Tjerk Opmeer has been working for the Dutch government in different capacities.
- With a broad experience in policy making, European and international affairs he builds bridges between topics and people.
- Striving to improve sustainable economic growth he worked at different ministries, executive agencies and in Brussels.
- He is currently director innovation & knowledge at the Ministry of Economic Affairs and Climate. He lives in Amsterdam with his wife and two sons.

Roel Bruinsma works for the directorate for innovation and knowledge. He is from a policy perspective responsible for the bilateral innovation relation between the UK and the Netherlands. The team works closely with the innovation-attaché network around the world to stimulate international cooperation for companies, research institutes and public authorities in the fields of innovation, technology and science.

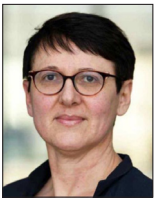
Bezuidenhoutseweg 73
2594 AC The Hague
The Netherlands

+31646152319
t.c.opmeer@minezk.nl
+31629674191
r.a.bruinsma@minezk.nl
https://www.government.nl/ministries/ministry-of-economic-affairs

Ministry of Foreign Affairs

Ministry of Foreign Affairs

The International Business Directorate (DIO) is part of the Ministry of Foreign Affairs and falls under the Directorate-General for Foreign Economic Relations (DG BEB). DIO supports Dutch companies in doing business internationally and contributes to strengthening the international competitiveness of the Netherlands.



Melanie Heidergott
Senior Policy Advisor
Directorate-General for Foreign Economic Relations | International Business Directorate

The main tasks of the International Business Directorate are:

- Support for International Business: Assisting Dutch companies in finding business opportunities abroad, such as trade missions, market research, and matchmaking.
- Public-Private Partnerships (PPP): Collaborating with companies, knowledge institutions, and governments to stimulate innovation and export, for example, through the Partners for International Business (PIB) programs.
- Financial Support: Developing and managing subsidies, such as the Dutch Good Growth Fund (DGGF) and the Subsidy Program for Demonstration Projects, Feasibility Studies, and Investment Preparation Studies (DHI).
- Sustainable and Inclusive Business: Promoting corporate social responsibility (CSR) and sustainability in international supply chains.
- Policy Development: Developing policies in the field of international business, often in cooperation with other ministries, the Netherlands Enterprise Agency (RVO), and embassies.
- Regional Focus Programs: Targeted programs for emerging markets in Africa, Asia, and Latin America.

The International Business Directorate is therefore an important link in encouraging Dutch companies to operate successfully and responsibly in international markets.

Rijnstraat 8
2515 XP The Hague
The Netherlands

+31611376428
Melanie.heidergott@minbuza.nl
https://www.government.nl/ministries/ministry-of-foreign-affairs

NWO-I ASTRON

ASTRON is the Netherlands institute for radio astronomy. Its mission is to make discoveries in radio astronomy happen through the design and operation of world-class instruments. Radio astronomy is a data- and compute-intensive science that exists by virtue of abundant and affordable compute capacity. The generation of instruments currently under construction challenges the state of the art and the next generation is likely to become unaffordable. New and emerging technologies, such as neuromorphic computing, are investigated as potential means to mitigate this challenge.

Chris Broekema
Scientist

Oude Hoogeveensedijk 4
7991 PD Dwingeloo
The Netherlands

+31655341692
broekema@astron.nl
https://www.astron.nl

OnePlanet Research Center / Radboud University

OnePlanet Research Center is a multidisciplinary innovation hub that focuses on developing cutting-edge technology for applications in health, nutrition, and agriculture. Established as a collaboration between imec, Wageningen University & Research (WUR), Radboud University, and Radboudumc, the center integrates expertise from microelectronics, AI, and digital technology to create sustainable solutions for societal challenges.

Richard van Wezel
Director Health

Toernooiveld 300
6525 EC Nijmegen
The Netherlands

+31643873786
richard.vanwezel@donders.ru.nl
https://www.oneplanetresearch.nl/

OPT/NET

Taras Matselyukh
CEO/CTO

OPT/NET BV sets a new benchmark for Huge Data processing with our MONITORED and OptOSS AI platforms.

We are helping Dutch society to enjoy reliable connectivity and digital services for tens of millions of residents.

The whole product delivers exceptional end-user experience through an intuitive AI-driven interface, streamlining complex backend processes linked with remote sensing and multimodal streaming sensor data acquisition and data fusion in real time. We boost human analyst's productivity by more than 1,000 times by merging AI automation with human problem-solving skills. Based on real "rocket science" (ESA SBIC) and leading AI research, with product developed and improved for a decade, we have 5 years of deployment in production service assurance with leading Dutch telecoms and growing footprint.

We are looking forward to expanding and developing our technology and business networks in NL and UK in preparation of our expansion into the UK market, where we expect to offer innovative AI based services to the telecom and critical infrastructure sectors which stem from our partnerships with local technology providers.

Kerkedijk 7A
1862 BD Bergen
The Netherlands

+31612996723
taras@opt-net.eu
https://opt-net.eu

DONDERS INSTITUTE
Radboud University

Radboud University

Radboud University (RU) is a broad university with leading expertise in 4 of the 6 sub-areas of Neuromorphic Computing (NC): Materials, Devices, Algorithms and Applications. RU also plays a coordinating role in the creation of the white paper on NC in the Netherlands (https://www.ru.nl/en/research/research-news/white-paper-highlights-potential-of-brain-inspired-computing) and the further development of a common vision and establishment of a coalition for NC in the Netherlands.

RU has recently established a neuromorphic computing initiative (https://www.ru.nl/en/research/research-themes/neuromorphic-computing) which combines expertise from the Donders Institute on brain-inspired computing with expertise from the Institute for Molecules and Materials on unconventional computing. We are keen to explore academic and industrial collaborations on the topic of neuromorphic computing.

Alexander Khajetoorians
Professor

Marcel van Gerven
Professor

Mahyar Shahsavari
Assistant Professor

Johan Mentink
Assistant Professor

Heyendaalseweg 135
6525 AJ Nijmegen
The Netherlands

+31646385357
a.khajetoorians@science.ru.nl
+31648745542
marcel.vangerven@donders.ru.nl
+31640743082
mahyar.shahsavari@donders.ru.nl
+31627353947
johan.mentink@ru.nl
https://www.ru.nl/en/departments/institute-for-molecules-and-materials/scanning-probe-microscopy
https://www.ru.nl/en/donders-institute

SURF B.V.

SURF B.V. is a cooperative association of Dutch educational and research institutions, serving as the National Research and Education Network (NREN) of the Netherlands. Its primary mission is to develop and provide advanced digital services to its member institutions (over 100), fostering innovation and facilitating knowledge sharing within the higher education and research sectors. The organisation possesses significant expertise in High-Performance Computing, Networks, Data Management & Processing, & Trust and Identity, etc.

A key role that SURF adopts in addition to being a service provider is providing an innovation workspace for the members to explore the development of cutting-edge emerging technologies for the day after tomorrow, such as; Neuromorphic, Quantum and Brain Computer Interfaces.

As the Innovation Lead for emerging technology concepts and applied strategic foresight, my interest resides in developing cross-sector partnerships that focus on the exploration and future perspectives of emerging tech such as neuromorphic computing.

More specifically, one of the primary attention areas is the pursuit of energy efficiency gains for large-scale computing infrastructures, in which neuromorphic technology promises significant improvements and opportunities. SURF plays a key role in the PPP value chain supporting connecting research to industry where improved time to market is currently critical.

Mark Cole
Innovation Lead

Moreelsepark 48
3572JA Utrecht
The Netherlands

+31622712343
mark.cole@surf.nl
https://www.surf.nl/

Topsector ICT

The Topsector ICT is one of ten “top sectors” in the Netherlands and part of the Dutch government’s Mission-driven Top Sectors and Innovation Policy. The mission of Topsector ICT is to support companies, government agencies and knowledge institutions to realize ICT innovations through knowledge exchange and close cooperation. To this end Topsector ICT stimulates national public-private coalitions around digital technologies. Topsector ICT covers the entire spectrum from fundamental research up to valorization. Educating new talent, retraining, and updating skills, disseminating knowledge, actively involving SMEs, and fostering international collaboration constitute significant components of the mission.

Neuromorphic Technology is one of the seven Digital and Information Technologies (DITs) considered crucial for economic growth, competitiveness and innovation within the Knowledge and Innovation Agenda Digitalisation (KIA Digitalisation) that Topsector ICT coordinates. The KIA Digitalisation provides a framework and useful points of reference for future ICT research and innovation for the 2024-2027 period.

Frits Grotenhuis
Director

Tijs Koops
Program Manager Internationalisation

Bezuidenhoutseweg 12
2594 AV The Hague
The Netherlands

+31645780523
Frits.Grotenhuis@topsector-ict.nl
+31611763740
tijs.koops@topsector-ict.nl
https://topsector-ict.nl/en/

university of groningen

COGNIGRON

University of Groningen / Cognigron

Creating a blueprint for future-proof computing.

The Groningen Cognitive Systems and Materials Center (CogniGron) at the University of Groningen is a cutting-edge research hub revolutionising neuromorphic computing. We delve into self-learning materials and advanced systems for brain-inspired computing, drawing inspiration from the human brain to tackle complex challenges with unparalleled efficiency.

The goal: 10,000x more energy-efficient computer chips.
Our mission is to transform traditional computing through innovative neuromorphic technologies and artificial intelligence hardware, reshaping the future of how we process information.

Neuromorphic computing in the Netherlands.
CogniGron was founded on a large gift from the Ubbo Emmius Foundation (UEF), giving us the means to pursue our dreams of scientific breakthroughs and awarding young and bright minds the opportunity to develop themselves in this new field of science. Recent newly received funding from the UEF enables ConiGron to stay at the forefront of research within neuromorphic computing in the Netherlands.

Judith Paridaen
Scientific Coordinator

Dirk Pleiter
Professor of Innovative Computer Architectures

Farhad Amirali Merchant
Assistant Professor of Innovative Computer Architectures

Bernoulliborg
Nijenborgh 9
9747 AG Groningen
The Netherlands

+31651442861
j.t.m.l.paridaen@rug.nl
+4916094436621
d.h.pleiter@rug.nl
+4915125885912
f.a.merchant@rug.nl
https://www.rug.nl/research/fse/cognitive-systems-and-materials/?lang=en

TU/e EINDHOVEN UNIVERSITY OF TECHNOLOGY

University of Technology in Eindhoven

Eindhoven University of Technology is world leading in many areas of neuromorphic computing research, including novel neuromorphic materials, devices, systems and new algorithms and software. I am part of the Electrical Engineering Department where we have strong research activity on electronic and photonic neuromorphic chips and systems. We are leading various national and international research programs on neuromorphic computing, such as the European Innovation Council SPIKEPro project, which includes two UK partners. I am interested in exploring further collaboration opportunities with other UK partners in the field of neuromorphic computing and disseminate also the expertise and range of activities we cover here at TU Eindhoven.

Yao Weiming
Assistant Professor

De Rondom 70
5612 AP Eindhoven
The Netherlands

+31 40-247 4528
w.yao@tue.nl
https://www.tue.nl/en/research

UNIVERSITY OF TWENTE. | MESA+ INSTITUTE

University of Twente

The MESA+ Institute at the University of Twente (UT) initiates and coordinates mission-driven research and valorization activities with a connection to the physical and engineering sciences of the UT, involving about 600 fte of researchers. MESA+ manages the UT NanoLab and chairs the NanoLabNL consortium of large scale nanotechnology facilities in The Netherlands. One of the research focus areas of MESA+ is on new materials and device concepts for energy-efficient, neuromorphic computing. These activities are coordinated via the MESA+ BRAINS Center. Hans Hilgenkamp also heads the National Science Agenda (NWA-ORC) program 'NL-ECO: Netherlands Initiative for Energy-Efficient Computing'.
In relation to these activities there is an interest from the MESA+ side to get connected with researchers and organisations working on energy-efficient / neuromorphic computing in the UK to explore possibilities for collaborations.

Hans Hilgenkamp
Scientific Directo
MESA+ Institute,
University of Twente

Drienerlolaan 5
7522 NB Enschede
The Netherlands

+31651929421
H.Hilgenkamp@utwente.nl
https://www.utwente.nl/

Organization

Kingdom of the Netherlands

Netherlands Innovation Network

Embassy of the Kingdom of the Netherlands
Netherlands Innovation Network
in London, United Kingdom

The Netherlands Innovation Network stimulates international cooperation between companies, research institutes and public authorities in the fields of innovation, technology and science. The network's activities help implement the international knowledge and innovation agenda of the Dutch government. We address national and global challenges, aiming to further develop key enabling technologies through international cooperation and a worldwide network of offices.

As Netherlands Innovation Network team in the United Kingdom we focus on brokering collaboration around key emerging technologies between companies, research institutes and public authorities in the Netherlands and the United Kingdom.

We look forward to discussing further opportunities for sustainable innovation partnerships, in order to jointly advance our common innovation, technology and science ambitions.

Marjolein Bouwers
Chief Innovation Advisor

Iris Leussink
Innovation Advisor

38 Hyde Park Gate
London SW7 5DP
United Kingdom

+31623595037 | +447590639770
marjolein.bouwers@minbuza.nl
+44 39917708
iris.leussink@minbuza.nl
https://english.rvo.nl/topics/international-network/innovation-network

Netherlands Enterprise Agency

Netherlands Enterprise Agency
International Innovation department
(Rijksdienst voor Ondernemend Nederland, RVO)

The Netherlands Enterprise Agency is the executive agency of the Dutch Ministry of Economic Affairs and Climate Policy. The Agency promotes sustainable development and innovation, both within the Netherlands and abroad. The Netherlands Enterprise Agency actively supports the Dutch top sectors. One of the most prominent sectors are the ICT and Life Sciences & Health sectors. The aim is to improve opportunities for entrepreneurs and strengthen their position, nationally and internationally.

Through the Netherlands Enterprise Agency both national and foreign organizations may gain access to a broad Dutch network of knowledge institutes, research centers, trade associations, companies and government departments. The agency participates in numerous international platforms and counselling groups. It helps with public funding, innovation- and business partners, know-how and compliance with laws and regulations.

Furthermore, you can contact us for information, advice, financing issues, networking and regulatory matters. Whether you are entrepreneur, knowledge institute or government body.

Ruben Wassink
Strategic Advisor and Coordinator Digitalization

P.O. Box 93144
2509 AC The Hague
The Netherlands

+31611888572
Ruben.wassink@rvo.nl
innovatiemissies@rvo.nl
https://www.rvo.nl/onderwerpen/innovatiemissies

Notes

Netherlands