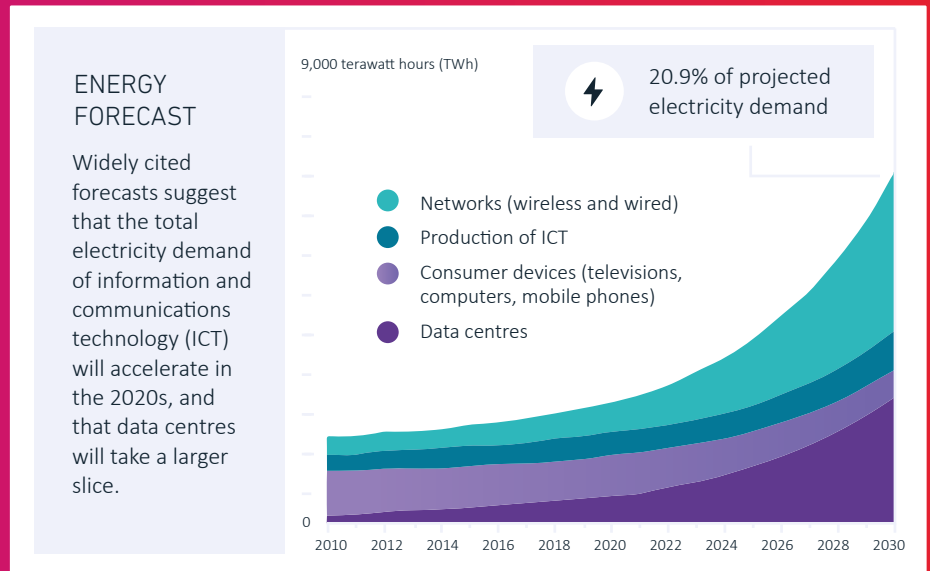


IT'S TIME FOR FUTURE-PROOF COMPUTING

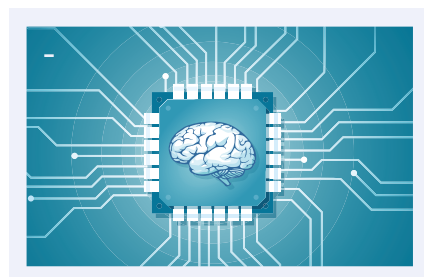
It's hard to imagine a life without the convenience of an online search, working in the cloud, communicating online or consulting ChatGPT. Computing has acquired a central role in our society, and although it has brought global prosperity, it has a downside. Surging data traffic and related energy consumption by data centres, partly due to the rapid increase of AI, cause an unsustainable demand that can't be met by modern computers. For this reason, it's time for a new generation of computers: future-proof computing.



Source: Jones, N. *Nature* (2018)

REVOLUTIONISING COMPUTER DESIGN

Despite more than 70 years of continuous innovation within chip and computer design, current events require a new revolutionary approach. To sustain the use of computers, we must combine knowledge and experience from the past 70 years and explore new materials and forms of computer design. The revolution: neuro-morphic computing. Up to 10,000 times more energy-efficient and thus a game changer for future-proof computing.



THE SOLUTION IS INSIDE OUR HEAD

Can we develop new materials and systems that are far more energy-efficient? The proof is literally in our own head: the human brain. Unlike any computer chip, our brain uses an ingenious network to process complex information. It effectively combines processing and storage simultaneously. More so, past experiences make processing information much faster and more energy-efficient.

This is why our research at CogniGron is inspired and guided by how our mind works.

MEET COGNIGRON

Groningen Cognitive Systems and Materials Center (CogniGron) is part of the University of Groningen and a globally recognised and unique multidisciplinary research centre. We conduct fundamental research on self-learning materials and systems for future-proof computing.

Our mission: to design a blueprint for future-proof computers.

Our objective: up to 10,000 times more energy-efficient computer chips.



CONTACT:



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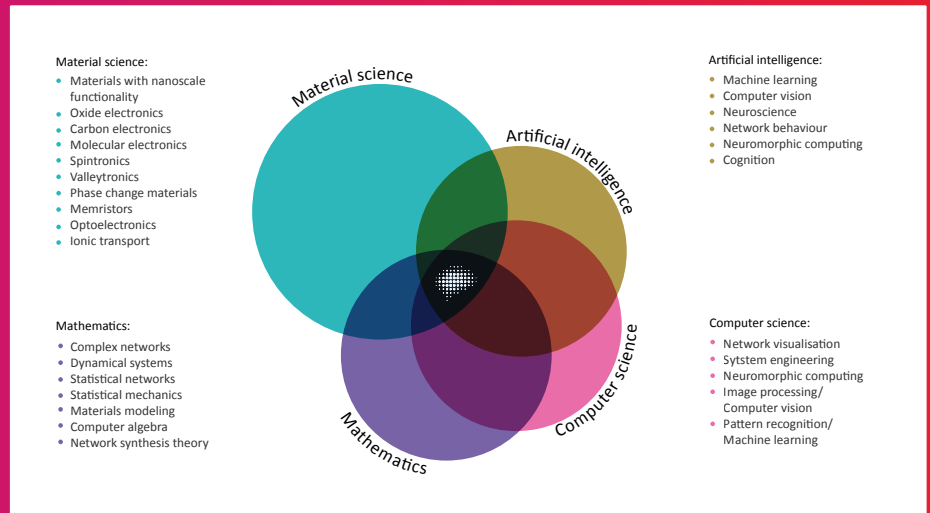


PROF. DR. ELISABETTA CHICCA

"I'm very proud of the Texel chip. This is the outcome of teamwork. And most of the people involved in this work are bright, young minds of CogniGron."

COGNIGRON: A UNIQUE MULTIDISCIPLINARY KNOWLEDGE INSTITUTE

We have leading scientists and young talent on board, and our team holds a unique combination of expertise: physics, material science, mathematics, computer science and artificial intelligence. Bringing these fields together in joint research, projects and innovation makes us a distinctive, globally recognised innovation centre in neuromorphic computing.



Overview of expertise within CogniGron



29 collaborating professors



55 junior researchers



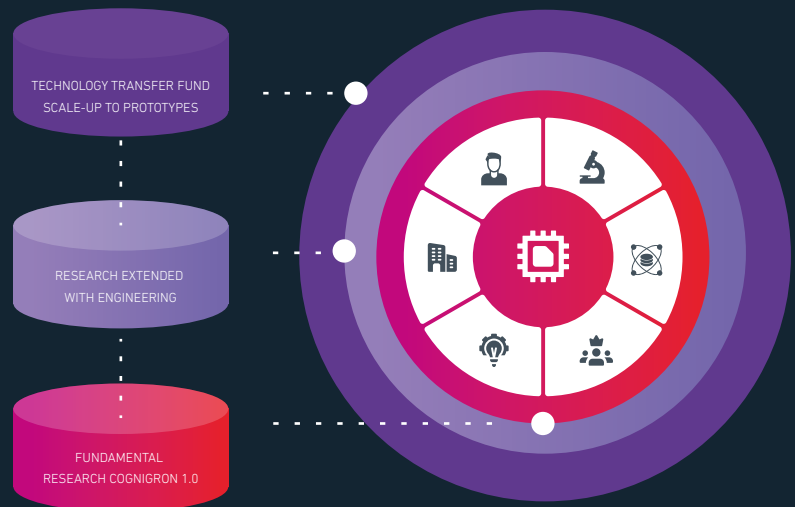
€37.5 million research budget



Based in Groningen and part of many national and international consortia

AMBITION: A FUTURE-PROOF COMPUTING ECOSYSTEM

In the upcoming phase for CogniGron, we will continue conducting fundamental research into future-proof computing and translate the existing knowledge into specific applications. To do so, we need to connect our scientific knowledge and business skills. Therefore, we are building an ecosystem where business and knowledge partners collaborate.



Within this ecosystem, we will collaborate on:



Developing new material as the basis for future-proof computer chips



Integrating applied engineering research to translate our knowledge into production



Initiating first applications for the implementation of neuromorphic computing



Establishing start-ups to bring applications to market

SOME OF OUR PARTNERS:

