

WILL MY CHILD REALLY BECOME A DATA TRASH ENGINEER, A NANOBOT REPAIRMAN OR A VERTICAL FARM CONSULTANT?

DISCOVER TOMORROW'S JOB AND CAREER OPPORTUNITIES FOR TODAY'S STUDENTS

- › Trends that are changing the international job market
- › Six futuristic professions
- › Work? A glimpse of how Generation Z experiences the world

UNIVERSITY OF TWENTE.

TABLE OF CONTENTS

Your child's future career: so many questions!	3	Technology and work: going deeper	25
		The financial side	26
		On the cutting edge of disciplines	27
Five trends that are changing the way we work	4	TechMed Centre	29
01 Technology is everywhere	6		
Four universities are joining forces	9		
02 It's a small world	10	Six futuristic professions	30
03 Robots	12	1. Nanobot repairman	31
04 Environmental and climate challenges	14	2. Flying car developer	32
05 Flexible work and the sharing economy	16	3. Data trash engineer	33
A change of era: opportunity or risk?	18	4. Voice UX designer	33
		5. Haptic interface designer	33
		6. Vertical farm consultant	34
From lifelong employee to lifelong learner	19	The mindset of Generation Z: how young people think about work	35
Skills of the future	20	Flexible education	37
Most entrepreneurial university in the Netherlands	22		
Lifelong learning	23		
Futureproof education in Twente	24	In closing: your child is creating the future	38



YOUR CHILD'S FUTURE CAREER: SO MANY QUESTIONS!

Do today's employers and young job seekers in Europe and beyond have a different perspective on careers and work than earlier generations did fifteen or thirty years ago? Is the job market changing drastically? In what sectors will there be plenty of work in 2030 or 2035? In which branches is automation taking over, and which new roles is it creating? Is it still reasonable to assume that my son or daughter will find a stable, lifelong job?

As a parent considering your child's future career path, you face countless questions.

Questions that are not always easy to answer in our rapidly changing, unpredictable world. One thing is certain, though: in the coming decades, we will face shifts in work and career conditions, both in the Netherlands and abroad. What these changes will look like exactly, no one knows. So how can you, as a parent, support and prepare your school-age son or daughter for a future as an international professional?

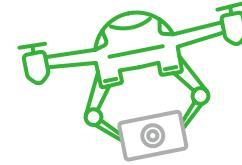
In this whitepaper, we offer you a range of insights that will give you direction and guidance. We start off with a tour of the developments that are happening around the world, showing you that today's innovations offer many opportunities. We discuss the expectations of trend watchers about new professions, such as that of a Vertical Farm Consultant, or a Flying Car Developer. We consider the changing perspectives on work and the growing importance of 'soft skills'. And we look at the views of Generation Z, the digital natives who embrace innovations so easily. Some of the jobs and ideas shared in this whitepaper may seem very futuristic, or even outlandish, from your perspective. However, we have good reason to present them as a fair indication of things we – and especially the younger generations – can expect in the years ahead. Read on and catch a glimpse of what your child's future could look like...





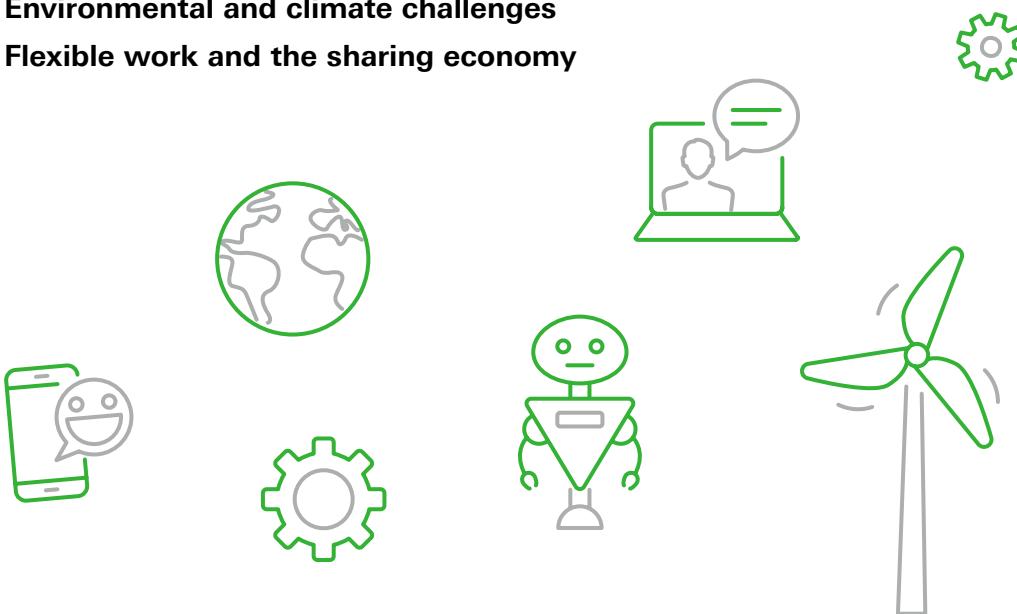
FIVE TRENDS THAT ARE CHANGING THE WAY WE WORK

FIVE TRENDS THAT ARE CHANGING THE WAY WE WORK



The world has always been changing, but the changes occurring in our era are more drastic and faster-paced than ever. So what are some of the major changes taking place today? Should they make us feel unsure or get us excited? And how will these changes affect your child's time as a student, and his or her future? Let's take a closer look at these questions by highlighting five specific changes.

- 1. Technology is everywhere**
- 2. It's a small world**
- 3. Robots**
- 4. Environmental and climate challenges**
- 5. Flexible work and the sharing economy**





01

TECHNOLOGY IS EVERYWHERE

TECHNOLOGY IS EVERYWHERE

Work nowadays does not look anything like it did 100 years ago.

Technological advancements are a major cause of this. Worldwide, three industrial – and technological – revolutions have brought about profound change: from mechanization and mass production to the development of computers and the Internet.

Digitalization is everywhere, and still picking up speed. Ten years ago, 500 million devices were connected to the Internet; in 2020 this number is already 50 billion, and by 2030 it is expected to be a trillion. We find ourselves in the midst of the Fourth Industrial Revolution, in which Artificial Intelligence (AI), robotisation and the Internet of Things (IoT) are taking on increasingly important roles. As a result, our way of working will keep changing in the decades ahead.



TIP!

NEED A QUICK HISTORY LESSON ON
THE FOUR INDUSTRIAL REVOLUTIONS?

Watch [this video](#) by the World Economic Forum.



TECHNOLOGY AND PEOPLE ARE INTERTWINED

Wearables are becoming more and more common, from Fitbits and smartwatches to Google Glasses. New manufacturing possibilities, such as 3D and 4D printing, are changing industries. Big Data are big business. Apps and social media, like Facebook and WhatsApp, are part of our daily routines. These are just a few examples of what life is like in our increasingly digital and technological world, in which new forms of collaboration between people and machines are emerging.

René Torenvlied, Professor and Programme Director of the Public Management Master's programme at the University of Twente (UT), points out that the Fourth Industrial Revolution is a huge game-changer. 'Tech and people are becoming more and more intertwined. This is why at UT we focus on the integration of tech in society. We see it as an important part of preparing students for the future.'

By the time your son or daughter starts working, 3D printing will be commonplace in the world of manufacturing.

Do you know how it works? PhD candidate

Alexander Blass explains why 3D printing has so much to offer.

TECHNOLOGY AND THE JOB MARKET

What are the consequences of these technological changes for the international job market? There is an abundance of reports and research on this topic, presenting varying opinions and figures. For example, 'The Future of Jobs 2018', a report by the World Economic Forum (WEF), says that by 2025 more than half of our current workload worldwide will be carried out by programmable machines. On the other hand, Mc Kinsey & Company only expect 11% of jobs in the Netherlands to become 'digital jobs' by 2030. This is less than what the WEF predicts, but still more than double the percentage in 2016 (5%).

In its report on 'Effects of technification on the job market' (2019), the Social and Economic Council of the Netherlands (SER, in Dutch) claims that there is no clear picture. This, says the SER, is because so many factors play a role: the speed of change, the economic situation, global political developments, and so on.

The expectation that more and more jobs will have a technological component is real, just like the expectation that automation and robotisation will create new types of jobs. On the other hand, insights like the ones we have looked at in the above section can help us to put into perspective the fear that the jobs of the coming generations will all be taken over by robots.

Take a look at the forecast for the job market in ten years' time.





FOUR UNIVERSITIES ARE JOINING FORCES

4TU.

The four tech universities in the Netherlands are constantly developing and researching new technologies. In [4TU](#), the universities of Delft, Eindhoven, Twente and Wageningen combine their knowledge and creativity. Together with the international business world, they search for solutions to social issues. One exciting outcome is an innovation competition, [4TU Impact Challenge in 2019](#), in which Twente start-up ECsens won with its sensors for quicker cancer diagnosis. A great example of how technology can save human lives! Is your child thinking about studying at a university of technology? Then he or she will soon be working on innovations like these.

A photograph of two young women sitting outdoors, smiling and waving their hands towards a smartphone screen they are holding together. They appear to be having a video call or a video conference. A white coffee cup is on the table in front of them.

02

IT'S A SMALL WORLD

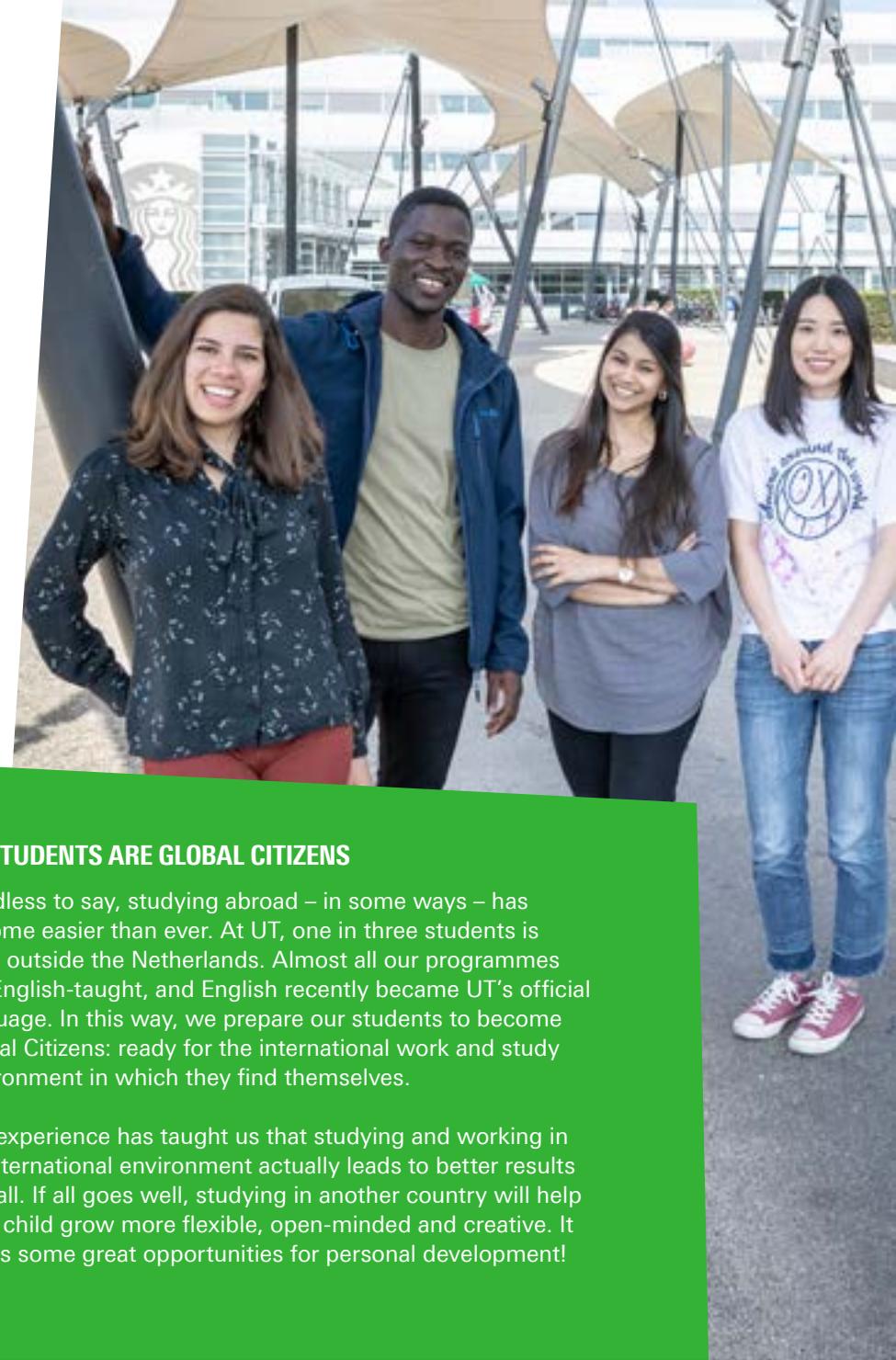
IT'S A SMALL WORLD

Another development that is here to stay is internationalisation. Borders are shifting and blurring. Different regions of the world are becoming increasingly interconnected. The distinction between ways of life, cultures and economies is diminishing. The world seems to be getting smaller. Think, for example, about all the international trade and transport possibilities. Or about young people who, using Twitter, Instagram, TikTok or the PlayStation, can effortlessly communicate and game together with peers on the other side of the world.

Knowledge, research and new ideas are also increasingly shared internationally. There is a good chance that your child will later enter a job market with some characteristics that would look a little strange to us today, but that will soon be the most normal thing in the world.

For example:

- **Virtual international companies** – due to the COVID-19 pandemic and the resulting trend towards working from home, these companies are on the rise more than ever.
- **Network organisations** – no hierarchy, but the same goal: an approach that fits in perfectly with 21st century values.
- **English-speaking** – a direct benefit for your child during his or her study abroad and certainly afterwards.



UT STUDENTS ARE GLOBAL CITIZENS

Needless to say, studying abroad – in some ways – has become easier than ever. At UT, one in three students is from outside the Netherlands. Almost all our programmes are English-taught, and English recently became UT's official language. In this way, we prepare our students to become Global Citizens: ready for the international work and study environment in which they find themselves.

Our experience has taught us that studying and working in an international environment actually leads to better results overall. If all goes well, studying in another country will help your child grow more flexible, open-minded and creative. It offers some great opportunities for personal development!

03

ROBOTS

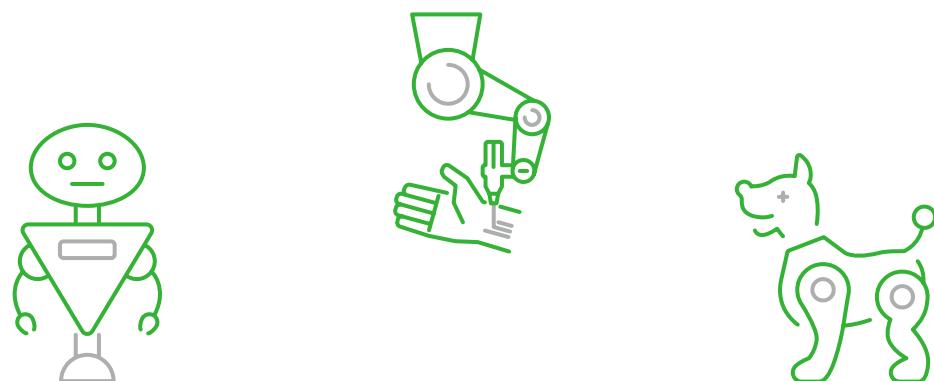


ROBOTS

The chances that your child will collaborate with robots in the future is quite high. After all, more and more companies are making use of them.

Simply put, robotisation is the fusion of humans and machines. Up until now, the robots we know of generally carry out routine work. Think, for example, of robot vacuum cleaners or lawn mowers. The combination of robot systems with Artificial Intelligence is leading to more and more self-learning robots. Using complex algorithms, these machines and software systems can solve problems, learn, and make decisions ‘independently’. It is likely that these skills will enable them to take over more tasks currently being carried out by people.

For work that requires a higher degree of creativity and flexibility, people will be necessary, of course. Meanwhile, the robotisation taking over jobs is also creating new ones, especially in the ICT sector. In the coming years there will be an estimated 133 billion new jobs resulting from robotisation ([WEF](#)).



FOOTBALL, MEDICAL AND RESTAURANT ROBOTS

- Who can play football better: a human or a robot? Decide for yourself by watching [this video](#) by the United States Air Force.
- The Twente Robotics Programme at UT is engaged in internationally leading research into the interaction between humans and robots, medical bots and service robots, among others. Coming soon to our campus: an entire Robot Centre!
- Recently, a few restaurants with [robot servers](#) (in Dutch) opened their doors in the Netherlands. This may be the future of the restaurant and catering industry, especially given the current coronavirus measures.

A photograph showing a man in a blue shirt and jeans crouching on a roof, working on a laptop. A woman in a striped top stands behind him, looking at the screen. They are surrounded by numerous blue solar panels. In the background, there is a metal railing and a dense green forest under a clear sky.

04

ENVIRONMENTAL AND CLIMATE CHALLENGES



SUSTAINABLE UT CAMPUS

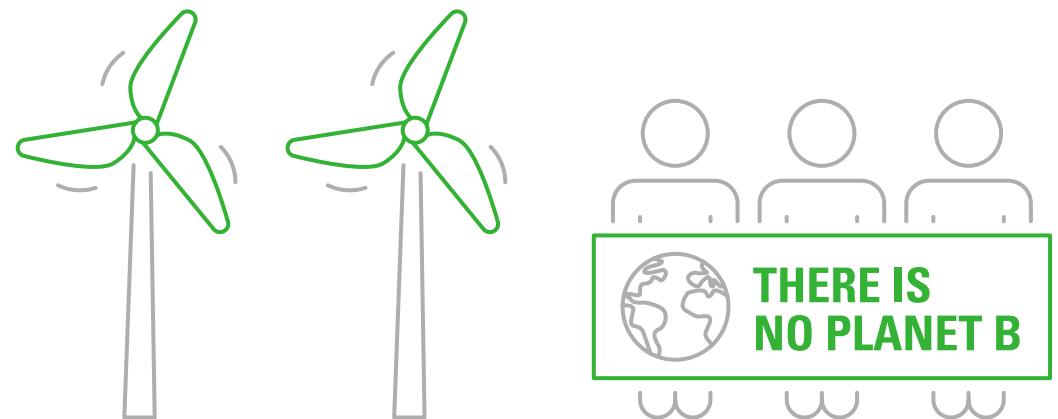
At UT, there are many initiatives to make our university more sustainable. For example, paths made from 'Grasfalt' – an asphalt alternative that is associated with lower CO₂ emissions – solar-powered lawn mowers, the use of recycled materials, and an emphasis on biodiversity on campus.

Our goal in this is to have a completely sustainable, energy-efficient campus by 2030. This includes reducing our CO₂ emission by 15%, among other things. The Green Hub is the central point at which we gather all our ideas, questions and knowledge on sustainability.

ENVIRONMENTAL AND CLIMATE CHALLENGES

Climate change is a hot topic. In the Paris climate agreement in 2015, 171 countries committed to work together to combat the global temperature rise. This has fuelled the quest for alternative energy sources, such as wind and sun, and new technologies, such as smart electricity meters. Companies are slowly changing their production processes, and there is a transition taking place toward a circular economy, in which raw materials are used again and again, and waste is reused as a raw material.

Generation Z (which consists of all young people born between 1995 and 2012), is highly aware of climate change. These youngsters are committed to fighting it, more so than older generations.



05

FLEXIBLE WORK AND THE SHARING ECONOMY



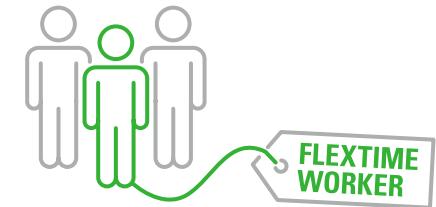
FLEXIBLE WORK AND THE SHARING ECONOMY

While the world around us changes, we are also changing the ways in which we work. One change is a shift from stability and continuity to a more flexible job market. For example, many companies now have a flexible shell of employees, and the number of flex workers and self-employed individuals is growing every year. Young people, especially, increasingly have temporary contracts, start their own businesses, or work in a so-called 'gig economy', going from project to project. For some of them, this is because there are less opportunities for a fixed contract. For others, it is because they enjoy the freedom, and like nothing more than going from one challenging task to the next.

In 2020, people changed their job and job description more often than 15 or 30 years ago. However, people do often stay in the same sector. That is useful information if you want to help your child decide what to study. For more tips and insights into the decision-making process around studying, read our [whitepaper on choosing a degree](#).

FROM HAVING TO USING

Having stuff has become less important than it used to be – especially for young people. Why buy something when you can just as easily hire or borrow it? Platform organisations like Airbnb and Uber – which allow customers to directly rent a room or book a taxi with the owner – are a response to this trend. According to the [Sharing Economy Monitor 2018](#) (in Dutch), people between 20 and 40 are the ones who most use these platforms in the Netherlands. Supply and demand come together without the need for ownership or an intermediary. In this sharing economy ([ShareNL explains what this term means exactly](#)) sharing and supplying are central. We do that a lot in the Netherlands. For example, **53% of Dutch people use Marktplaats** (a Dutch version of Ebay).



ARE WE HEADED TO A 30-HOUR WORK WEEK?

Europeans, and especially Dutch people, are actually working in more flexible ways and for less hours today than we did some years ago. In the Netherlands, a full-time, 40-hour work week is less and less common among people with higher education degrees, and there are plans to introduce a standard work week of just four eight-hour days.

Recently, [the Dutch trade union CNV even advocated a 30-hour work week](#) (in Dutch). More and more often, young people choose to work part-time, so they have time for other things, like social activities, travel, hobbies or family and friends.

A CHANGE OF ERA: OPPORTUNITY OR RISK?

Jan Rotmans, Professor of Transition Science (Erasmus University, Rotterdam) claims that we don't live in an era of change, but in **a change of era**. Typical characteristics of such a transition between two eras include: huge changes in the energy world, leading toward a circular economy; the increase of citizen initiatives, such as food cooperatives; and a new social order. Rotmans calls this new social order 'Society 3.0'.

FEAR OF CHANGE

If you think this all sounds pretty intense, you're not the only one. In the Netherlands, half the population is afraid of how new technologies are changing the world ([Tech Monitor 2018](#), in Dutch). A certain amount of fear, or alertness, is normal and even healthy when we face new developments. For example, think about how people first reacted to discoveries like the airplane or computers. Yet these innovations, which may have been scary at first, have increased our life expectancy, made us more mobile, and enabled us to travel around the planet. Change brings uncertainty, as well as challenges and opportunities. What can this new era offer the young people of today?



HAVE A CONVERSATION AT HOME WITH A WORKER OF THE FUTURE!

What are your views on this change of era we are in, and on all the developments we've touched on in this section? And what does your child think? Why not ask? Here are some starting points for what could be a fascinating discussion:

- In the Netherlands, working part-time is quite common. How does your child feel about working full-time or part-time? For what things would he or she like to have 'time left over' later? Are these priorities similar to yours, or are they very different? How is part-time work perceived by younger generations in your culture?
- How does your child feel about buying and owning their own things, as compared to renting or borrowing? In the Netherlands, for example, students often use bikes to get around; will your son or daughter hire one, like the [Swapfiets](#), or would they rather have their own bike?
- How do these changes make you feel? Discuss possible (generational) differences and similarities together.

FROM LIFELONG EMPLOYEE TO LIFELONG LEARNER

Whether you live in Germany, Italy or China, the world, and the international job market, were very different when you were preparing to enter the work force than they are today. In the past, the degree you chose often determined your career path. That is different for today's young people. For years, being a 'lifelong employee' – that is, working at the same company for 40 or even 50 years – was the norm in the Netherlands. Today's young people hardly go for that option anymore. In the previous section we noted how everything in society has become more flexible – and your child's future career will likely be no exception.

SKILLS FIRST

Do you see your child as a future baker, psychologist or technician? Or do you see your son or daughter as a problem solver, connector, or organiser? Due to increasing flexibility and technification of the job market, thinking in permanent professions is being replaced by thinking in terms of skills, qualities and knowledge that can be developed.

One of the factors affecting this is that new technologies simply keep requiring new skills. Getting a grip on this shift can greatly help you and your child form a picture of his or her future – international – career. In order to be equipped for participation in the society of the future, children and young people today need to develop so-called 21st-century skills (World Economic Forum (WEF) 2016). These skills are:

- **Foundational Literacies** – especially numeracy and literacy skills;
- **Competencies** – such as critical and innovative thinking, communication and collaboration;
- **Character Qualities** – such as initiative, persistence, leadership and empathy, among others.

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SPENDING YOUR ENTIRE WORKING LIFE WITH ONE EMPLOYER USED TO BE A VIRTUE

*Stefan Kooij,
Programme Director of Applied Physics, UT*

'My question to parents is:
does your current work still consist
of the same elements that were
characteristic of your curriculum, study
programme and first work experiences
at the time? Or has your career also
turned out very differently?'

RENÉ TORENVLIED,
PROFESSOR AND PROGRAMME DIRECTOR OF
PUBLIC MANAGEMENT, UT

SKILLS OF THE FUTURE

René Torenvlied explains that 21st-century skills are already important in work life today. ‘Which means that in education they are already outdated. We need to be a step ahead, thinking about what our students will need later on in their careers. In our courses at UT, we do not just transfer knowledge, but we also focus on personal development and academic skills. Reflecting, for example, is one of the most important, metacognitive skills a person can have nowadays.’

Because innovative technologies can take over simple, repetitive tasks, human skills and soft skills are increasingly important. Below, we have listed a number of important skills of the future mentioned by futurists, trend watchers and research agencies:

”

REFLECTING IS ONE OF THE MOST IMPORTANT, METACOGNITIVE SKILLS A PERSON CAN HAVE NOWADAYS.

René Torenvlied

PROBLEM-SOLVING

Do you sometimes think your son is very critical? Or does your daughter seem to be asking endless questions? As their parent, make sure you don't curb this. In his book, The Global Achievement Gap, educational expert Tony Wagner indicates that critical thinking and problem solving skills form the basis for innovative ideas. By looking at issues from different perspectives, and asking good questions, young people can come up with (new) solutions.

TECHNICAL SKILLS

Naturally, technological developments mean that having technical skills is essential – from understanding how a technical system works to programming and designing algorithms. Is your prospective student already showing interest and insight in this area? These skills will open doors to many emerging jobs for them.



‘Human skills are becoming increasingly important. What makes people different from robots? Which human skills will become even more important in the coming years? I think abilities like ‘sense making’ will gain ground: interpreting and being able to ask ethical questions, for example, about the use of Big Data. Technology is good for simulating, but not for ‘being’. You need people for that.’

JORDY GOSSET,
UNIVERSITY LECTURER AND PROGRAMME DIRECTOR OF
COMMUNICATION SCIENCE, UT



OPTIMISATION SKILLS

Is your child good at constantly improving their gaming scores? Do they automatically see what works efficiently, or do they have a lot of perseverance? Continuing until a process is optimised, with constantly improving results, is certainly a skill that scientists, engineers and managers need.

RESILIENCE AND ADAPTABILITY

Young people tend to be more flexible with regard to change than older people. This means your child has an advantage. Because adapting, going with the flow, and resilience are essential skills in a rapidly changing world. According to René Torevlied, students develop resilience when they discover their strengths and weaknesses. ‘Then, they need a safe environment – like UT, with our unique educational model and our campus – to help them further develop their skills: a testing ground where they can explore what they can and cannot do, and prepare for their future.’

ETHICAL THINKING

Ethical thinking is another emerging skill. This one is about employees who dare to ask difficult questions, and who stick to moral standards in complicated situations. Or professionals who raise the question as to how far you want to go as a company with Artificial Intelligence, or the use of collected data. People with the drive and the skills to think ethically will be worth their weight in gold in the future!

ENTREPRENEURSHIP

Young people finding their way in the international job market and managing a varied career need an entrepreneurial mindset. Reid Hoffman, co-founder of LinkedIn, wrote a book about this, together with Ben Casnocha: The Start-up of You. Their aim is to help starting professionals prepare for a career in these challenging times.

 [WATCH THIS VIDEO SUMMARY OF 'THE START-UP OF YOU'.](#)



MOST ENTREPRENEURIAL UNIVERSITY IN THE NETHERLANDS

In 2019, UT was chosen as the most entrepreneurial university in the Netherlands for the fourth year in a row. Every year, about 15 to 25 spin-off companies emerge from our university. Three of these were even nominated for the Academic Startup Competition last year.

A driving force behind this is Novel-T – located in Kennispark Twente, the largest innovation campus in the Netherlands. One of its many exciting features is Incubase. Located on our campus in Enschede, Incubase is a place where students can come work on their start-up ideas, and get help and advice from professionals.

'We train academics who are independent and passionate about learning to choose their own path. What are some important elements that prepare students for their future? Taking initiative, being sure of yourself and developing an entrepreneurial attitude.'

RENÉ TORENVLIED,
PROFESSOR AND PROGRAMME DIRECTOR OF
PUBLIC MANAGEMENT, UT



LIFELONG LEARNING

Whether your child is aware of it or not, he or she should prepare for a career spanning some 50 to 60 years with multiple stages and changes. International consultancy agency [PWC wrote in a report](#) that staying flexible, agile and relevant will be a necessity in the job market. When (technological) innovations come in rapid succession, knowledge and skills become outdated more quickly. So continuous learning is very important. At UT, we call it lifelong learning: continuously developing yourself so that you can deal flexibly with change.

Stefan Kooij, Programme Director of Applied Physics at UT, shares that lifelong learning is everywhere. 'At the moment, young people study and older people work. This distribution will shift, because everyone wants to – and will have to – continue developing. I expect modern educational initiatives to arise that are all about flexible and tailored learning. Think, for example, of paying for each separate study credit. Certificates showing specific knowledge or competences will become more important than fully completed post-academic trajectories.'

HOW CAN YOU PREPARE YOUR SON OR DAUGHTER?

- A good way for students to develop their 'soft skills' is to find a suitable internship, or to take on a management role with a student association. Encourage your child to think about which side of themselves they want to strengthen, in addition to their studies for a degree.
- Discuss entrepreneurship with your child. Do they see themselves starting up their own company, or playing an entrepreneurial role within an existing organisation? What skills would they need to do that? Do you see them in your child?
- Go a bit deeper: what does your child see as his or her personal strengths and weaknesses? Does he or she have positive experiences of working in a team, or achieve better alone? If these are difficult questions, an [online personality test](#) can give some insight.

DID YOU KNOW...

- ... that the Dutch government promotes lifelong learning? With the [Lifelong Learning Credit scheme](#) your children (if they meet the requirements) can stay in the Netherlands and continue studying after they graduate.
- ... that this development may also lead to new jobs? For example, in their 'Jobs of the Future' report, [Cognizant](#) envisions a position of Uni4life Coordinator, who will supervise alumni eager to continue studying. Learn more about six other futuristic jobs in this [whitepaper](#).





FUTUREPROOF EDUCATION IN TWENTE

At UT, we are constantly assessing whether our educational offer is relevant, and which innovations are needed.

You can read more about our forward-looking way of thinking in the [Shaping2030 Vision](#). We expect our society to be digitally mature by 2030. By then, we will live in a world that continues to change. Therefore, we want our students and academics to become international problem solvers, who can respond easily to change, and who feel at ease in an unpredictable environment. As self-assured individuals, driven by curiosity, we believe they can have maximum societal impact.

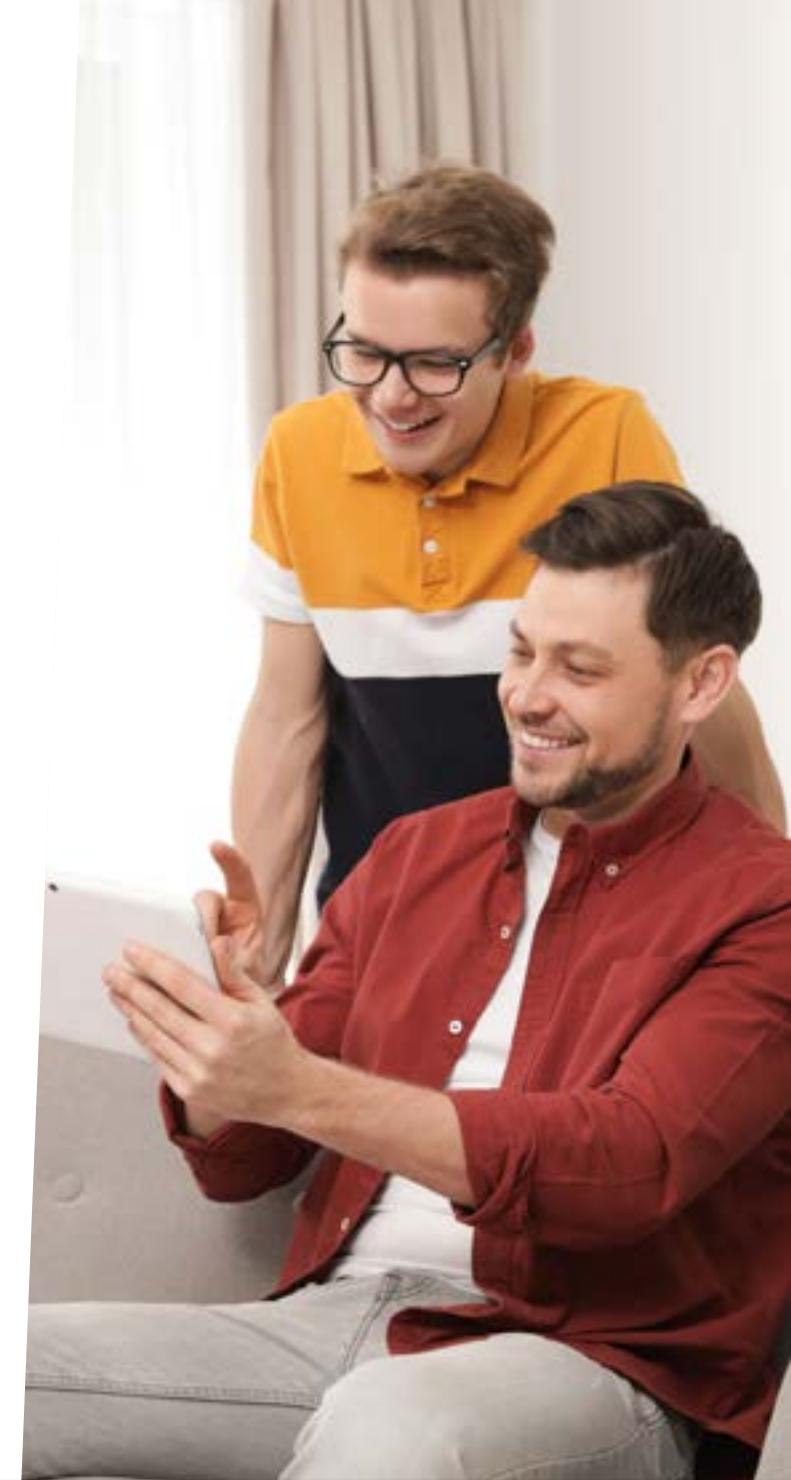
TECHNOLOGY AND WORK: GOING DEEPER

Technology will play an increasingly important role in the job market. The World Economic Forum (WEF) expects 85 million jobs to be taken over by machines by 2025. The tech trend also creates new opportunities: it is estimated that 97 million new jobs will be created in the next five years, focusing on collaboration between people, technology and algorithms (The Future of Jobs Report 2020, WEF). In this section, we'll take a closer look at these opportunities, and discuss what they might mean for your son or daughter's career.

OPPORTUNITIES ON THE JOB MARKET

What kind of job market can my son or daughter prepare for? Which degree offers the best opportunities? Is there a direction that will give my child a good position on the job market no matter what?

Researchers at McKinsey have concluded that many technically trained professionals are needed today and will continue to be needed. With automation and technological advancements occurring so quickly, there is a constant need for new experts who can come up with, design and maintain all the new systems and technologies. Furthermore, according to McKinsey, teachers and managers who can support the tech specialists will also be in permanent demand.





THE FINANCIAL SIDE

What about my son or daughter's future economic situation? Which programmes have the best financial prospects? This is hard to predict, because so many factors are at play. The general rule of thumb is: the higher the level of education, the higher the salary. Having said that a well-paid job may be nice, but job satisfaction and fulfilment are also gaining importance and recognition as a reward in themselves among employees – and employers – worldwide.

We usually advise students to give priority to the sector or study programme they are most enthusiastic about, not the one that promises to bring in the largest amount of money. It is definitely a good idea to discuss the tensions between income and job fulfilment with your son or daughter.

DO YOU WANT TO FIND OUT MORE ABOUT YOUR CHILD'S SHORT-TERM FINANCIAL SITUATION?

In our [whitepaper](#) on the cost of being a student in the Netherlands, we have outlined all the costs and sources of income a student can have.

ON THE CUTTING EDGE OF DISCIPLINES

According to René Torenvlied, jobs that connect different disciplines are the jobs of the future. 'Boundaries are blurring, and even fading away. Our unique, Dutch-taught Technical Medicine programme is a good example of that. It is a programme – designed at our university – that steps right into the gap between care and technology with a completely new medical discipline. Other sectors, too, are in need of professionals eager and able to look beyond their own discipline, and to delve into other disciplines. People who can switch between their own field and tech, for example.'

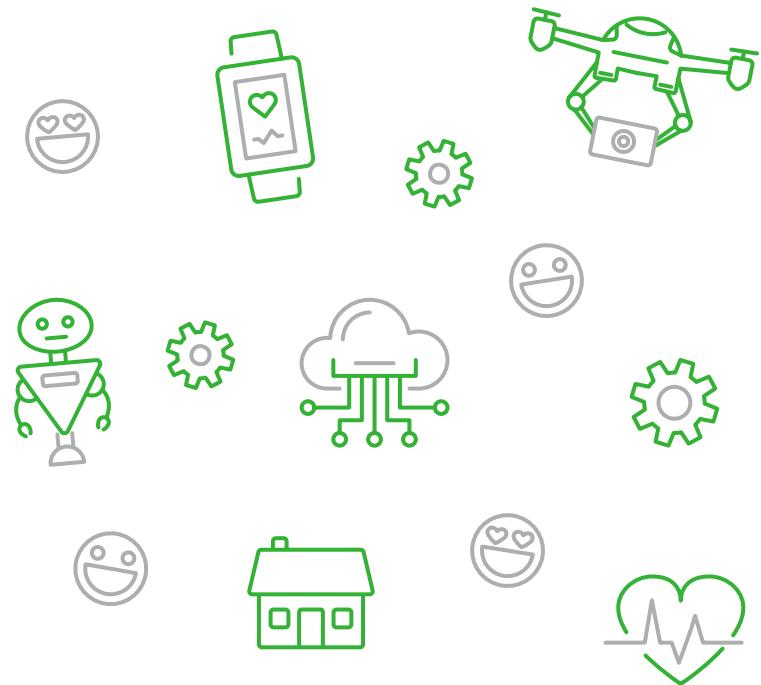
Smart technology is making healthcare more effective, more personal and more accessible. For example, discover the world of wearable robotics, like the exoskeleton UT researchers and students are working on.

JOBs THAT DID NOT EXIST TEN YEARS AGO

Working at the cutting edge of disciplines is not just for the future.

Here are some current job areas that did not exist ten years ago:

- Jobs that bridge the gap between healthcare and technology
- Jobs in which 'happiness' is central
- Jobs centred on the interconnection of household devices and appliances
- Jobs related to Big Data



'Research that is closely related to societal issues almost always requires specialists from different fields to work together. They all think and work from different disciplines, but at the same time, they must be able to understand each other in order to arrive at a solution together. We teach our students to work with others in that way; our project-driven education is a great way to achieve this.'

STEFAN KOOIJ,

PROGRAMME DIRECTOR OF APPLIED PHYSICS, UT

BRIDGE BETWEEN HEALTHCARE AND TECHNOLOGY

In addition to the technical physicians graduating from our Technical Medicine programme, more and more hospitals are appointing a nurse to make the connection between care and technology: the so-called Chief Nursing Information Officer (CNIO). This person is involved in innovative healthcare solutions, understands and implements the Internet of Medical Things (IoMT), and is there to improve different aspects of healthcare. You can read more about the growing popularity of CNIOs in [this article](#).

GREATER ROLE FOR 'HAPPINESS'

The Chief Happiness Officer – a role many young companies are embracing – is an advisor who focuses on increasing employee happiness at work. For example, through inspiration sessions, workshops, or (team) coaching that focuses on personal leadership. Take a look at [the article by the HEC Paris business school](#) on work happiness.

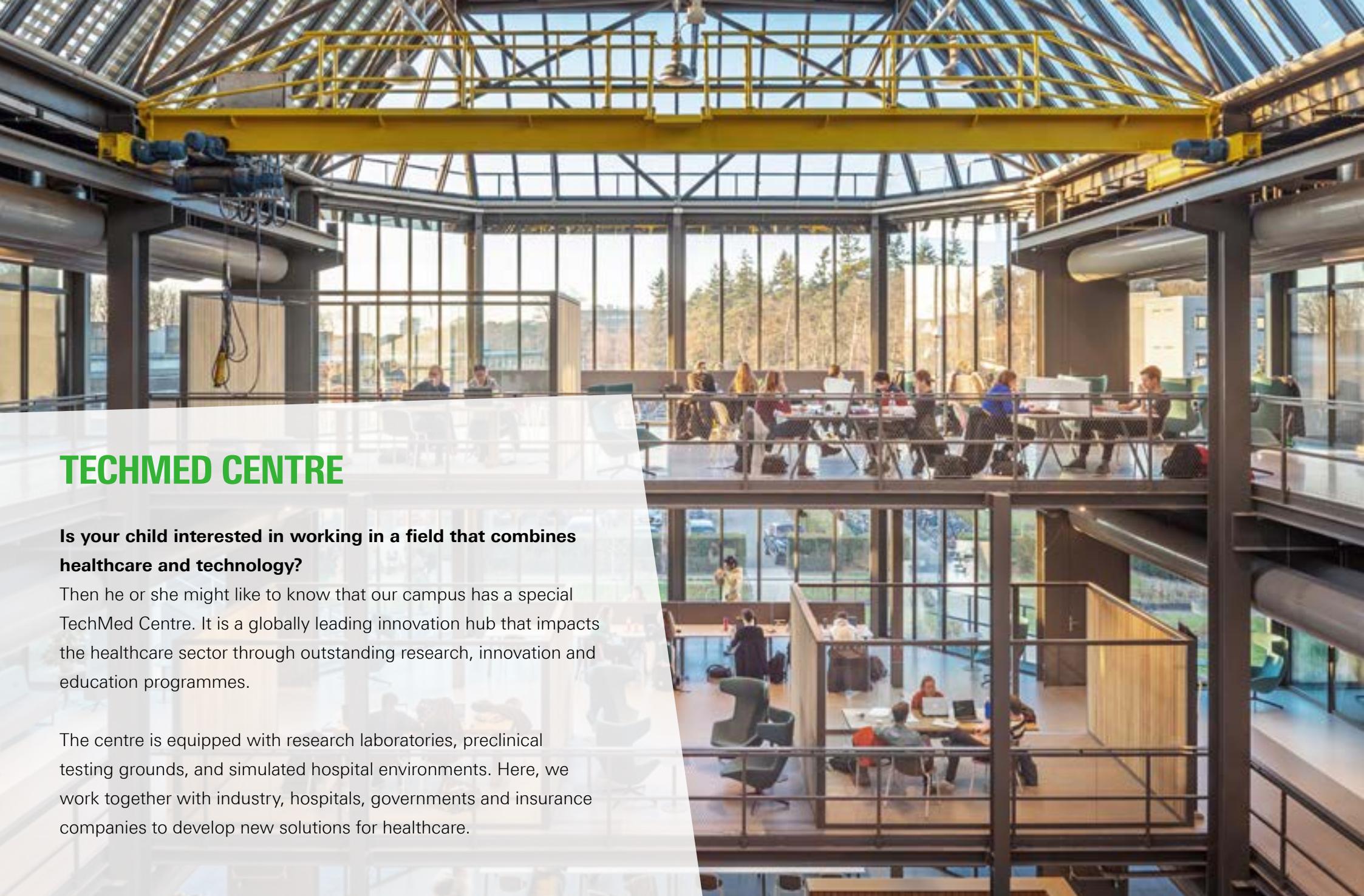
EVERYTHING IN A HOUSE IS CONNECTED

How many devices in your house are connected with each other, or can be controlled from your smartphone? A Domotics, or Home Automation, Expert is someone who specialises in using technological solutions in the home. You might also call him or her a smart home specialist.

BIG DATA SCIENTIST

Big Data are everywhere, which means there is a growing demand for Data Scientists. A Data Scientist has been described as someone who can find a lump of gold in a large pile of unstructured data. This requires analytical skills and knowledge of computers as well as knowledge of the field in which the user, or customer, operates.





TECHMED CENTRE

Is your child interested in working in a field that combines healthcare and technology?

Then he or she might like to know that our campus has a special TechMed Centre. It is a globally leading innovation hub that impacts the healthcare sector through outstanding research, innovation and education programmes.

The centre is equipped with research laboratories, preclinical testing grounds, and simulated hospital environments. Here, we work together with industry, hospitals, governments and insurance companies to develop new solutions for healthcare.

SIX FUTURISTIC PROFESSIONS

In the previous section, we looked at job areas that did not yet exist years ago. There are many more specific jobs that have only recently emerged. For example, think about all the 'vloggers' and 'influencers' children and young people follow online. That said, futurist [Thomas Frey](#) thinks that 60% of the next decade's best jobs are ones that have not yet been discovered. [Cognizant](#) has come up with 42 jobs that could see light of day in the next ten years.

We've highlighted a number of these futuristic professions below – not because we're sure these jobs will come, but just to give you an idea of possible positions that require different skills than many of today's jobs. For example, because they are more focused on ethical behaviour, (digital) safety, or futuristic dreams, ideas and innovations.

1. Nanobot Repairman
2. Flying Car Developer
3. Data Trash Engineer
4. Voice UX Designer
5. Haptic Interface Designer
6. Vertical Farm Consultant



TIP!

SET TO WORK WITH TECHNOLOGIES OF THE FUTURE

At UT, during and alongside their studies, students can get started with technologies they find interesting for the future. Read [Jeroen's story](#), who in addition to being a full-time student is part of the UT Solar Team.

'Robots are not going to take over the world, but the job market is going to change. There are more and more jobs in which technology plays some kind of role. Specialists are still necessary. But highly trained, empathetic professionals, who can work together and respond to change, are the future.'

RENÉ TORENVLIED,

PROFESSOR AND PROGRAMME DIRECTOR OF
PUBLIC MANAGEMENT, UT





1. NANOBOT REPAIRMAN

Imagine that your child becomes the maker of very small robots that attack cancer cells in the human body. According to experts, nanobots – a thousand times smaller than a human hair – are set to turn the medical world upside down. It is expected that in the future, these mini-robots will be able to effectively combat cancer and other diseases. Naturally, these little helpers will require engineers or repairers to keep them going - and getting better and better at what they do.



foto: Pal-V

2. FLYING CAR DEVELOPER

Who knows, your son or daughter might become a designer of flying cars. They already exist! While rare and very expensive, they may be the next step after electric, self-driving cars.

 **DID YOU KNOW THAT THE DUTCH COMPANY PAL-V
ALREADY SELLS FLYING CARS?**

Watch this PAV-V [video..](#)

3. DATA TRASH ENGINEER

With more data being created and collected every hour of the day, it's only logical that there is more and more 'data trash' around. Will your son or daughter become a techie who can trace unused data and extract hidden insights from it? Strong analytical skills and skills in statistics are vital for anyone eager to hunt for treasures in enormous (Big) data sets.

4. VOICE UX DESIGNER

At the moment, many of us use voice assistants like Siri for simple searches. But in just a few years' time, 'voice' will be far more advanced, and part of all kinds of apps. One of the challenges is to develop a voice system that can carry out an engaging and pleasant conversation. Is your teenager interested in languages, writing, UX design and psychology? Then this might be the perfect job for him or her.

5. HAPTIC INTERFACE DESIGNER

Wearables or Virtual Reality apps that you can experience with multiple senses? In ten years' time, the young people of today will be able to develop an interface through which – using a touch pad – you can physically experience what you would encounter on the way from a station to a café. You won't just see the route, you will also feel the cup of coffee in your hands. Haptic Interface Design is a unique combination of product design, marketing, material knowledge and psychology.



A DISCUSSION WITH YOUR PROSPECTIVE STUDENT

Dream about the future together!

- What will the world look like in 50 years' time?
- What role does your son or daughter see for themselves in that world?
- Encourage them to think creatively and boldly about these questions.



6. VERTICAL FARM CONSULTANT

In the Netherlands, vertical farming is a small niche. But in the future, it may well be a solution to the demand for more (locally produced) food in settings worldwide where space is short. A bit like a food apartment building. The idea of vertical farming was introduced in 2001 by a professor at Columbia University in New York. And who knows, it may be a standard way of producing food in ten years' time.

🔗 WANT TO FIND OUT MORE ABOUT THIS LAST JOB?

The University of Wageningen is [researching vertical farming](#)

THE MINDSET OF GENERATION Z: HOW YOUNG PEOPLE THINK ABOUT WORK

Young people who were born between 1995 and 2012 (like your child) belong to what has been called Generation Z. If your son or daughter is one of them, he or she is a true '**digital native**'. These young people were born and raised in a digital era, and they have never known a world without Internet, smartphones, apps and social media. How do they see the world, and how do their views affect their expectations of work and careers? In this section, we explain some of the characteristics of this generation, so that you can understand your son or daughter even better.

ONLINE AND OFFLINE ARE ONE AND THE SAME

Online and offline life are continuously and seamlessly intertwined for Gen Z'ers. For them, online contact is just as real as physical meetings, and Internet is a necessity of life. They accumulate information via online platforms or influencers, not

so much by reading books or long texts. Tip: don't ask your child to read this entire whitepaper, show them one of the YouTube videos instead!

ENTREPRENEURIAL

Your child is part of a pragmatic, entrepreneurial, realistic generation. They are about doing and action. Think of climate activist Greta Thunberg, for example. She started with a school strike, but now travels the world sharing her call for change in climate policy.

AN 8-SECOND ATTENTION SPAN

What about your son or daughter's concentration and attention span? Generation Z is used to things being fast-paced. They like variety, are stars at multitasking, and have the shortest concentration span any generation has ever had: a mere eight seconds. As parents, it is good to know that your



child can scan and filter information very quickly, but that they don't absorb knowledge very deeply. Take time to discuss important topics together that require more attention, such as questions about what to study, or how to prepare for the future.

TRANSPARENT AND AUTHENTIC

One thing Generation Z does not like is hierarchy. These young people would rather work in flat organisational structures based on equality than in strictly hierarchical settings. Honest, transparent communication, which conveys the message succinctly, is best for them. So, don't be shy when talking to your son or daughter, and be genuine in your interest.

”

I'M HERE TO TELL YOU THAT,
UNLIKE YOU, MY GENERATION
WILL NOT GIVE UP WITHOUT A FIGHT.

Greta Thunberg during the World Economic Forum in Davos 2020



WANT TO KNOW MORE ABOUT GENERATION Z?

- Researchers at [McKinsey](#) wrote an article about Generation Z and their values.
- Watch this [TEDx Talk](#) in which college professor Corey Seemiller explains how Generation Z is going to make a difference in the world.

FLEXIBLE EDUCATION

Most Gen Z'ers have not entered the work force yet. But it is already clear that they study differently to other generations. As a Gen Z parent, you have probably already realised this at home! They adapt quickly, shift quickly and like variety. They're solution-oriented, like to watch and listen more than to read, and aim for maximum freedom of choice, also in their studies.

None of this should surprise us, considering the fact that these youngsters have been dealing with constantly changing technologies and platforms for their entire lives. With this in mind, SURF, a cooperation of more than 100 educational and research institutions in the Netherlands, is researching options for better and more flexible education. For example, SURF states that there is more demand among young people for open programmes, such as an ICT programme without exams or a specific curriculum.



'The future of higher education is characterised by flexibility. More than ever before, students have the opportunity to take control of their studies and career. There is a lot of room for personal interpretation, including gaining experience abroad, doing internships in the business world, teacher training, and more. The possibilities are endless.'

STEFAN KOOIJ,

PROGRAMME DIRECTOR OF APPLIED PHYSICS, UT

IN CLOSING: YOUR CHILD IS CREATING THE FUTURE

At the University of Twente in the Netherlands, your son or daughter is part of the future. We are a '**people-first**' university. This means that your child is central to our vision, together with the people and societal domains he or she wants to commit to as a professional later on. We combine solid academic education with a fierce commitment to personal development. As a technical university, we equip students to contribute to a fair, sustainable and digital society.

As a parent, you may find it challenging to imagine the job market in ten years' time. It may encourage you to realise that many of the jobs of the future are being created at UT. René Torenvlied: 'Here, students contribute to shaping their own studies. They discover for themselves what unique multidisciplinary combinations and collaboration entail. As a result, they find unexpected solutions to societal and scientific issues. We equip them to actively respond to – worldwide – developments. Ultimately, their career may not rest on what job they can get, but on what job they create for themselves.'

The jobs of the future? Today's youngsters create them for themselves!



NO 1
LEADING THE WAY IN ENTREPRENEURSHIP
AND SOCIAL IMPACT

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OF WHICH 29% ARE INTERNATIONAL

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