

Carinthian University of Applied Sciences (CUAS)

School of Engineering & IT

Study Programs and Research Topics

FULL
POSSIBILITIES
FOR YOU

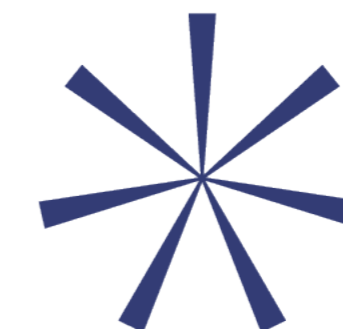
Ulla Birnbacher (CUAS)



ATHENA
EUROPEAN UNIVERSITY

25th – 29th | 2023 September | Sitia
<https://1stathenatf.hmu.gr>

1st **ATHENA** TECHNOLOGY FORUM



ATHENA
EUROPEAN UNIVERSITY

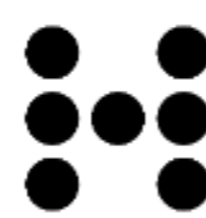


Carinthia University of Applied Sciences CUAS



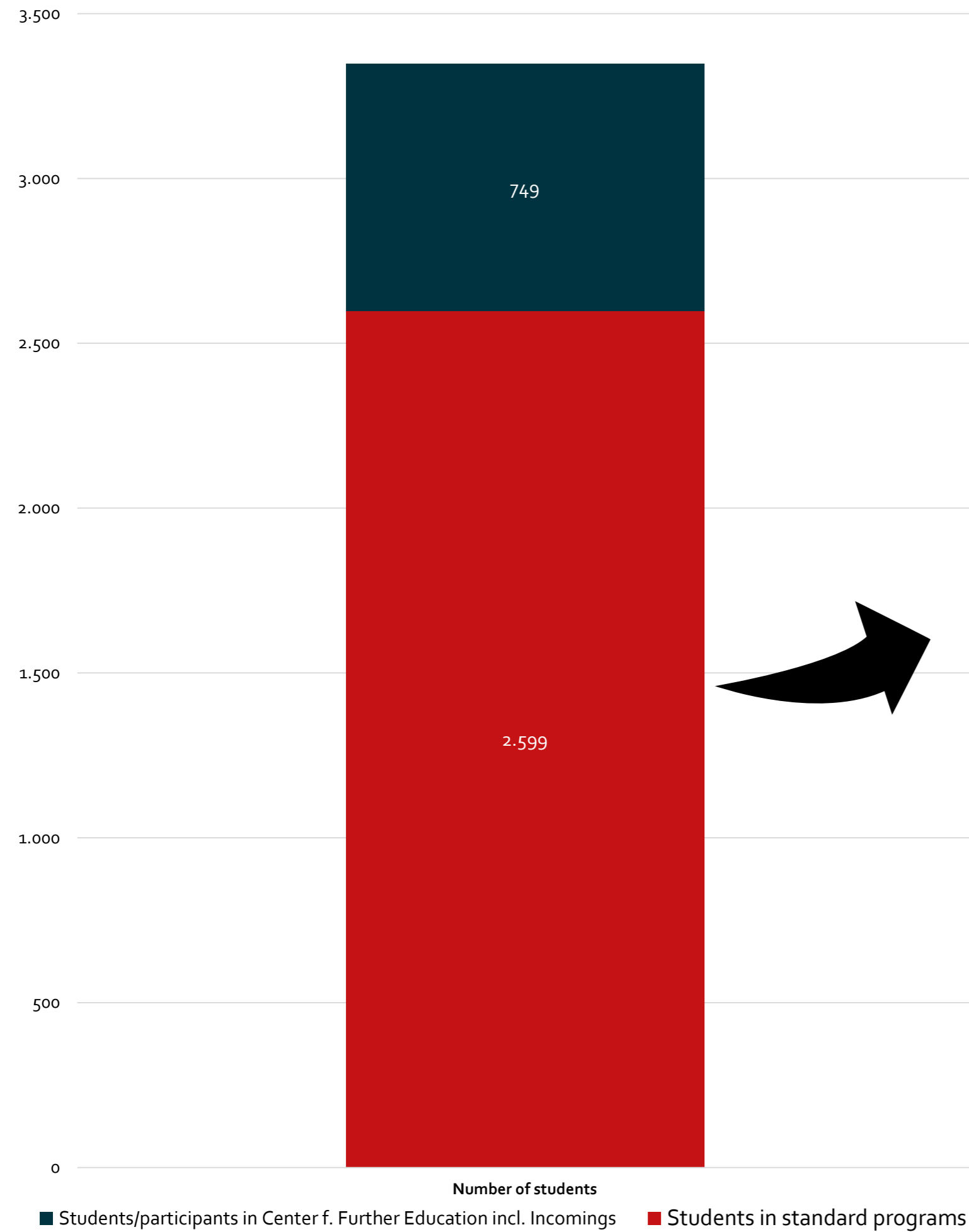


Numbers Data Facts



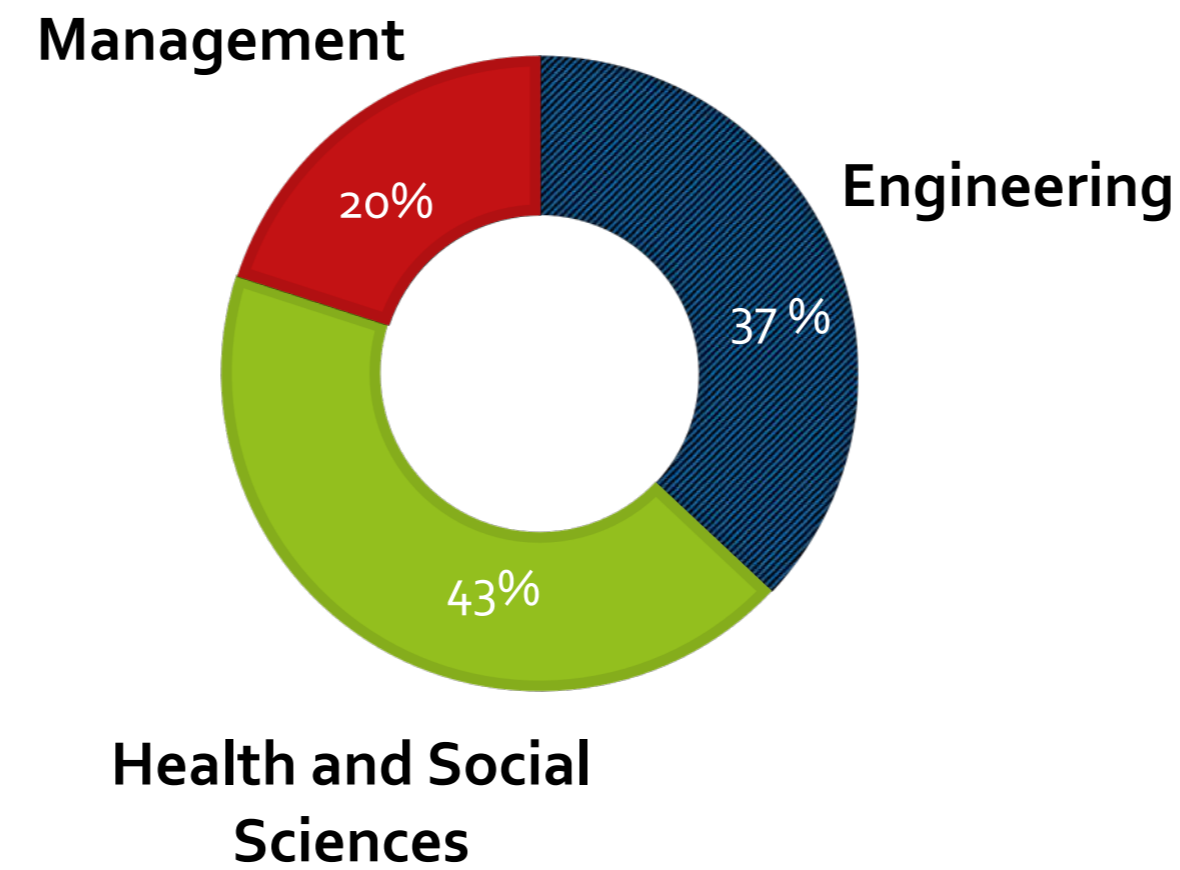
KÄRNTEN
University of
Applied Sciences

Total: ~ 3.348 Students



Students in standard degree programs

... by core fields

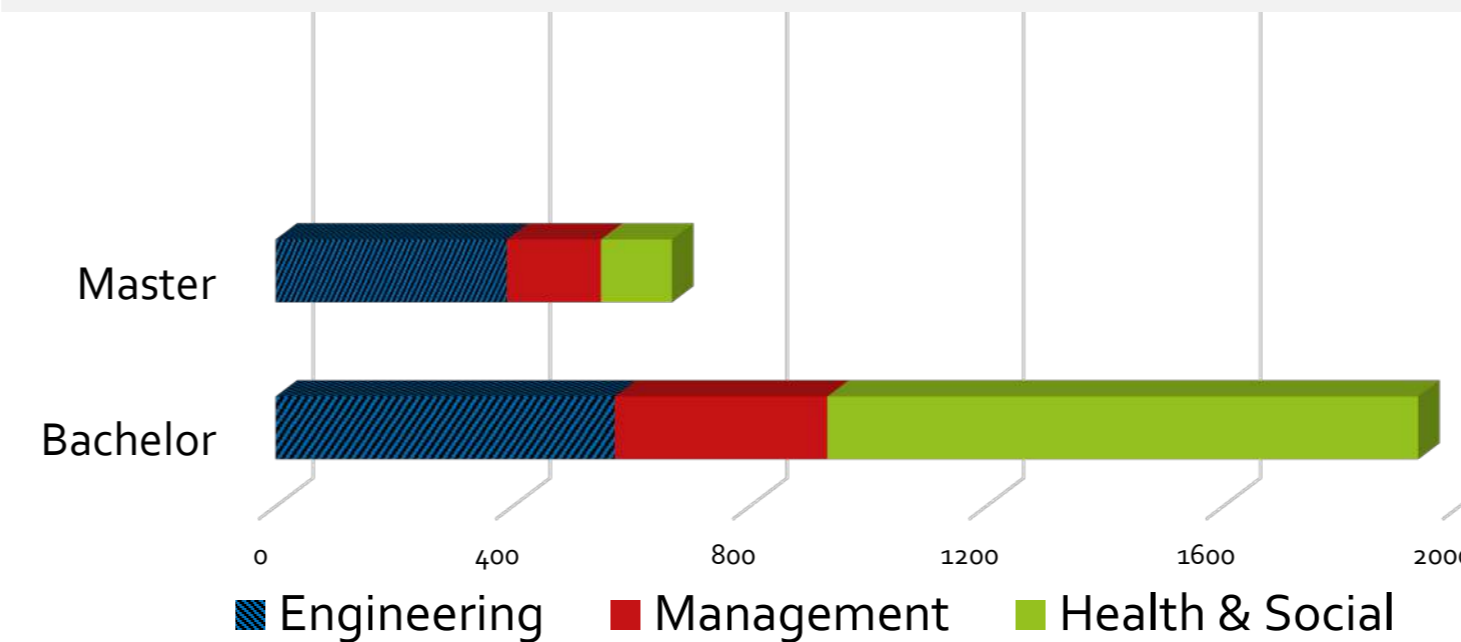


... by nationality

Austrian students: 79 % from Carinthia
319 international students from 50 nations:

International Students	319
Germany	73
EU	46
Non-EU European countries	66
Africa	25
Asia	90
America	19

... by degree



10.025 Graduates

Winter Term 2022

Our education & business units



Studies & Teaching 4 Schools

19 Bachelor degree programs
19 Master degree programs



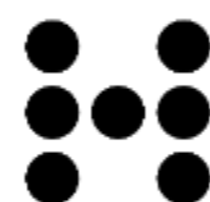
Research & Development CUAS Research

4 Research Centers
19 research groups



Continuing Education Center for Further Education

29 further education training
programs



KÄRNTEN
University of
Applied Sciences

Studies and Teaching

Number of schools: 4
professors & full-time lecturers, central services: 450
External lecturers per semester: 500



Civil Engineering & Architecture
Ideas into practice.
Bachelor | Master | Further Education
INFORM NOW: Civil Engineering & Architecture >

Engineering & IT
Passion for technologies.
Bachelor | Master | Further Education
INFORM NOW: Engineering & IT >

Health Sciences and Social Work
Focused on people.
Bachelor | Master | Further Education
INFORM NOW: Health Sciences & Social Work >

Management
Creating value through management.
Bachelor | Master | Further Education
INFORM NOW: Management >

Engineering

Mechanical Engineering

Industrial Eng. & Management

Systems Engineering

Lightweight Engineering

Systems Design 

Information technologies

IT- Network & Communication Eng.

IT- Medical Engineering

IT- Geoinformation & Environment

IT- Multimedia Technology

Green Transition Engineering *New 2024* 

Applied Data Science 


Communication Engineering 

Electrical Energy and Mobility Systems 

Medical Engineering & Analytics 

Industrial Engineering & Management

Industrial Power Electronics 

Integrated Systems and Circuits Design 



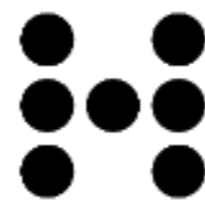
Green Transition Engineering

- New Bachelor program
- Focuses on sustainability, digitalisation and data engineering
- Starting October 2024



Sem 1	Tree of Life: Biology & Biodiversity	Applied Mathematics	SDGs	Orientation & Outdoor Project	Climate Zones & Change	Programming & Computer Science	Env. Data Sources & Integration	
Sem 2	Fundamentals of Natural Sciences	Statistics & Empirical Social Research	Environ. Ethics	Science Comm	Landscapes Ecosyst	Energy/material flows & cycles	Databases & Data Structures	Intro Digital Modelling of the Environment
Sem 3	Energy Transition	Internat. Policies, Environment. Law & EU Green Deal	Ecosystem Services & Live Cycle Assessment	Project management	Alpine Excurs.	Data Acquisition Tools & Methods	Data intelligence	
Sem 4	Sustainable & Smart Mobility	Interdisciplinary Project I	Marktes, Finan. Systems & Princip. Circular Economy	Participation proc. & conflict	Climate Mitigation & Adapt. Approach	Intro. Regional Planning & Land Use Planning	Digital Environm. Data Analysis & Visualization	
Sem 5	Smart City	Interdisciplinary Project II	Selected Module 1	Selected Module 2	Selected Module 3	Selected Module 4		
Sem 6	Professional Internship					Internship accompanying Seminar, Trends in Green Transition		Seminar Bachelor Thesis Exam

■ Social Transition ■ Ecological Transition ■ Economic Transition
■ Technological Transition ■ Data Engineering ■ Methodologies and Scientific Fundamentals



KÄRNTEN
University of
Applied Sciences

Research & Development

€ 8 million € research volume 2022

📄 120 funded research projects & contracted research for/with the public & private sector

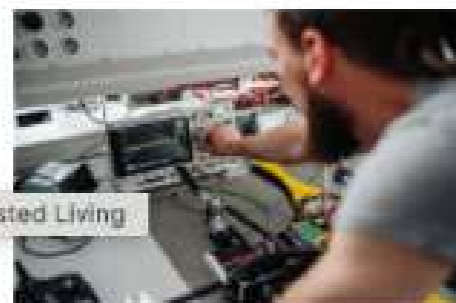
🤝 250 R&D partners



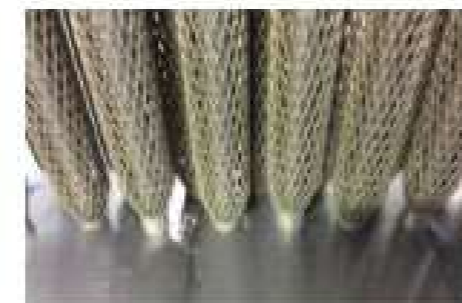
4 Research Centers



AAL
Active & Assisted Living



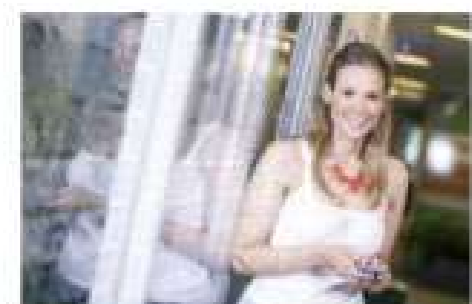
ABMS
Advanced Battery Management System



AMAVIS²
Additive Manufacturing in Agile Virtual Systems for Design



CONNA
Construction Needs Nature



DTMO
Digital Transformation Modelling



EnHeGi
Environmental Health and Geoinformation



FuCoSo
Future Concrete Solutions

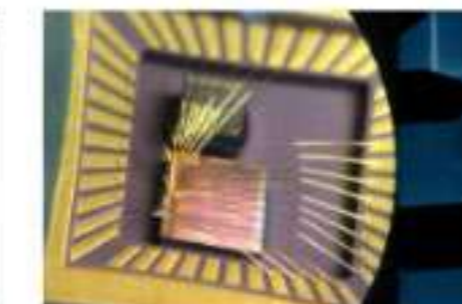


IRaT
Innovation Research and Transformation

19 Research Groups



SMGi
Smart Materials for a Greener Industry



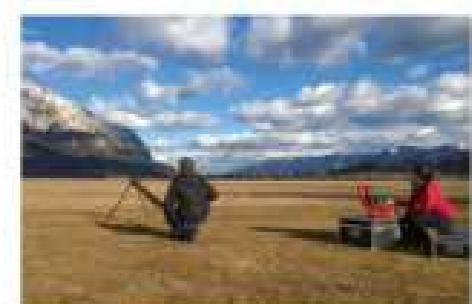
SIMS
Sensor Integrations in Mechatronics Systems



TRANS_SPACE
TRANSformative Societal and Political Cultural Engagement



Triple_E
Entrepreneurship & Entrepreneurship Education



SIENA
Spatial Informatics for Environmental Applications



OuPL
Online & Pocket Labs



RESPECT
Modelling and Design of Integrated Systems and Circuits



ROADMAP-5G
R&D Center For 5G Use Case Integrations



MCA
Management of Conservation Areas



PEREZOSO
Interprofessioneller Behandlungsansatz für Patient*innen mit Arthrose



SIRaD
Sustainable Innovation Research and Development



<https://www.cuas.at/en/research>

School of Engineering & IT

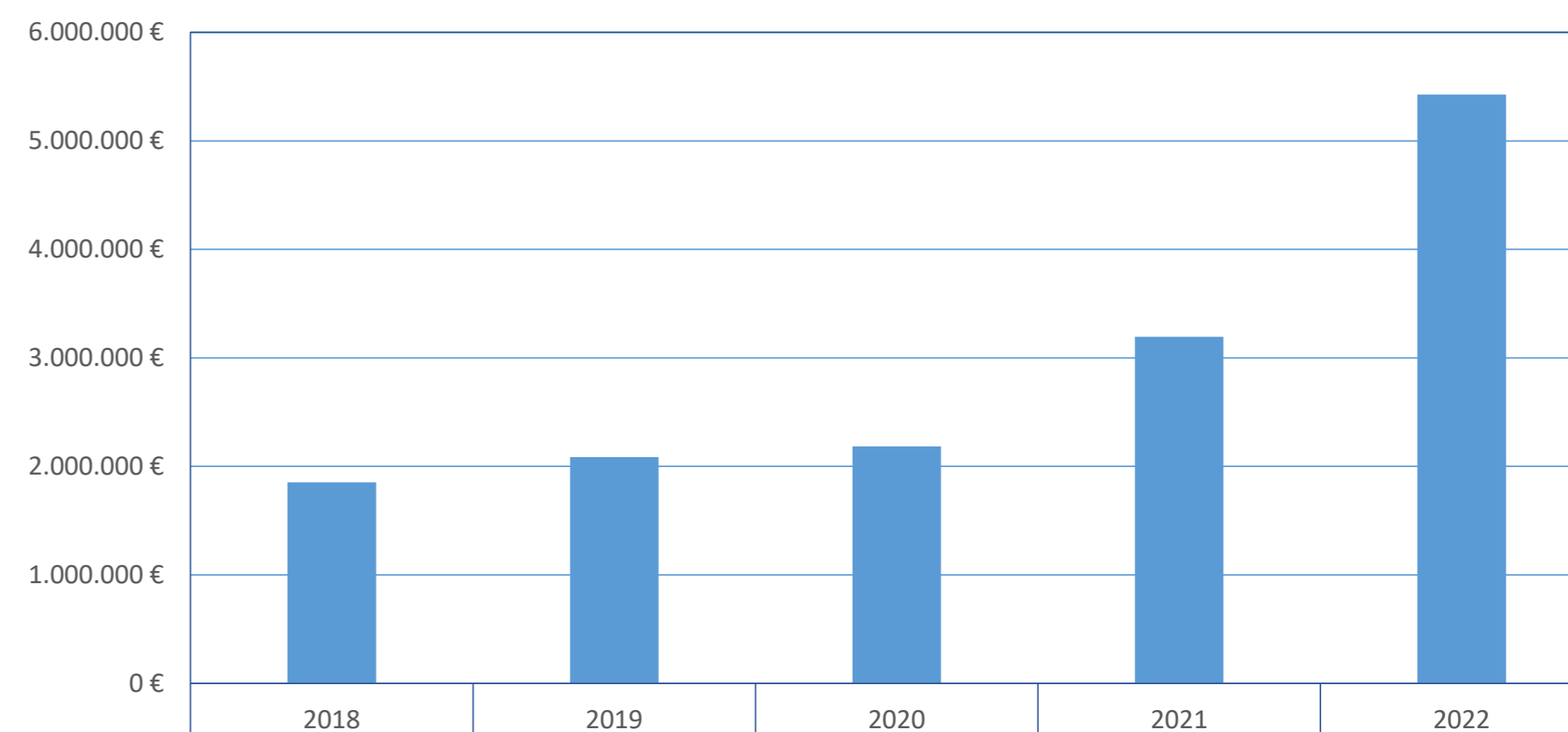
Research & Innovation



Our research work contributes to the **digitalization of society and industry**, supporting the **European Green Deal**, and the **European Industry 5.0 initiative**, to increase the **resilience of industry and society**.

- Research centers: 4
- Research groups: 10
- Researcher: 94
- Research projects: > 100

Research volume EngIT



Research areas

Smart specialisation

- Microelectronics
- Additive Manufacturing
- Electronics and Sensors
- Wireless Communication
- Smart Learning
- Data Science and AI

People and health

- Technology-assisted assisted living
- Health technology
- Medical technology including AI
- Participatory research

Environment and climate

- Environmental monitoring including AI
- Biodiversity research
- Management of protected areas
- Climate neutral energy systems

Innovation methods, Ecosystem development and Entrepreneurship

Additive Manufacturing

Additive Manufacturing, intelligent Robotics, Sensors and Engineering ADMiRE



Need

- **Beneficiaries of the technology:** 30 mio people worldwide
- **Market volume:** The global market volume in the 3D printing sector for medical technologies is estimated at 5.600 Mio € for 2030

Research topics

- **Multi-material printing:** elastomers and fibers composites
- **Topology optimization:** FEM based
- **Printing strategies:** 5-axes based
- **Sensor integration:** contact force measurement

Results

- **Demonstrator:** Lower leg prosthesis
- **Increased user comfort:** Participatory research approach

Impact: 4 PhDs, 1 endowed professorship

Research volume: 1.26 Mio €

Duration: 5 years

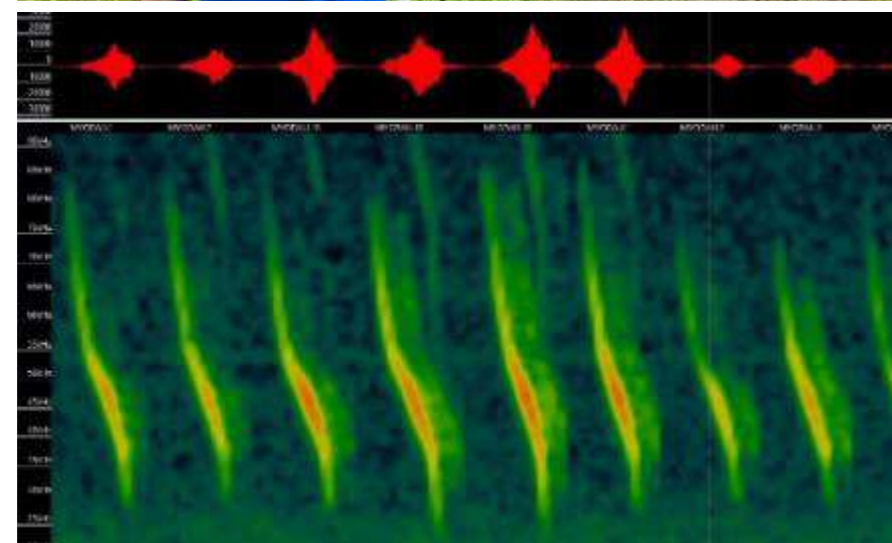
Funding organisation: FFG

Nature Conservation Research

UNESCO Chair on Sustainable Management of Conservation Areas



unesco
Chair



Mission

To empower and enable personalities, institutions and societies to face present and future challenges in the management of conservation areas (MCA)

Research focus

- Use of technology for nature conservation
- Man and the biosphere
- Transdisciplinary research designs

Our Laboratories

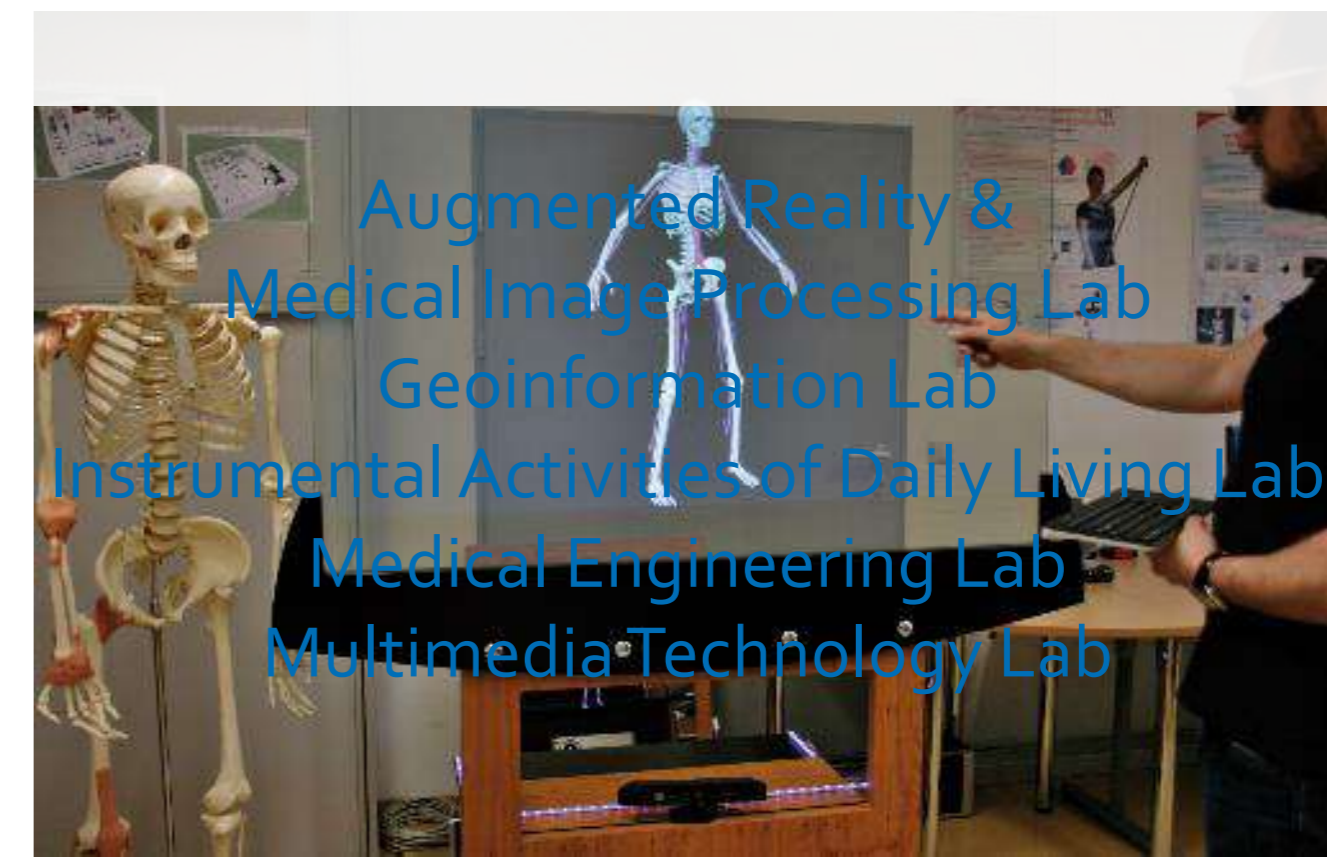
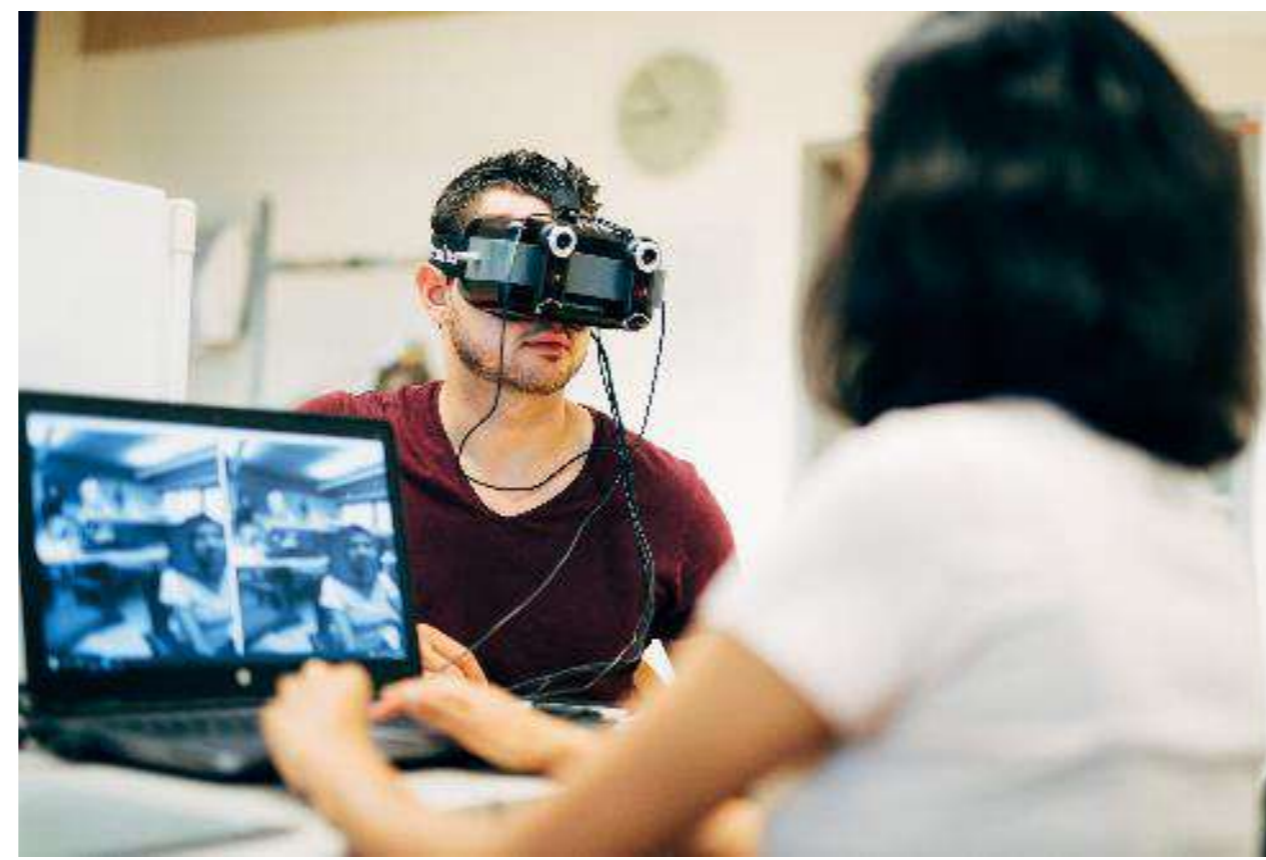


... in the fields:

- Information Technology
- Mechanical Eng. / Industrial Eng. & Management
- Electronics / Mechatronics
- Structural Engineering, Building Material Technology und Building Physics
- Electromagnetic Tolerance



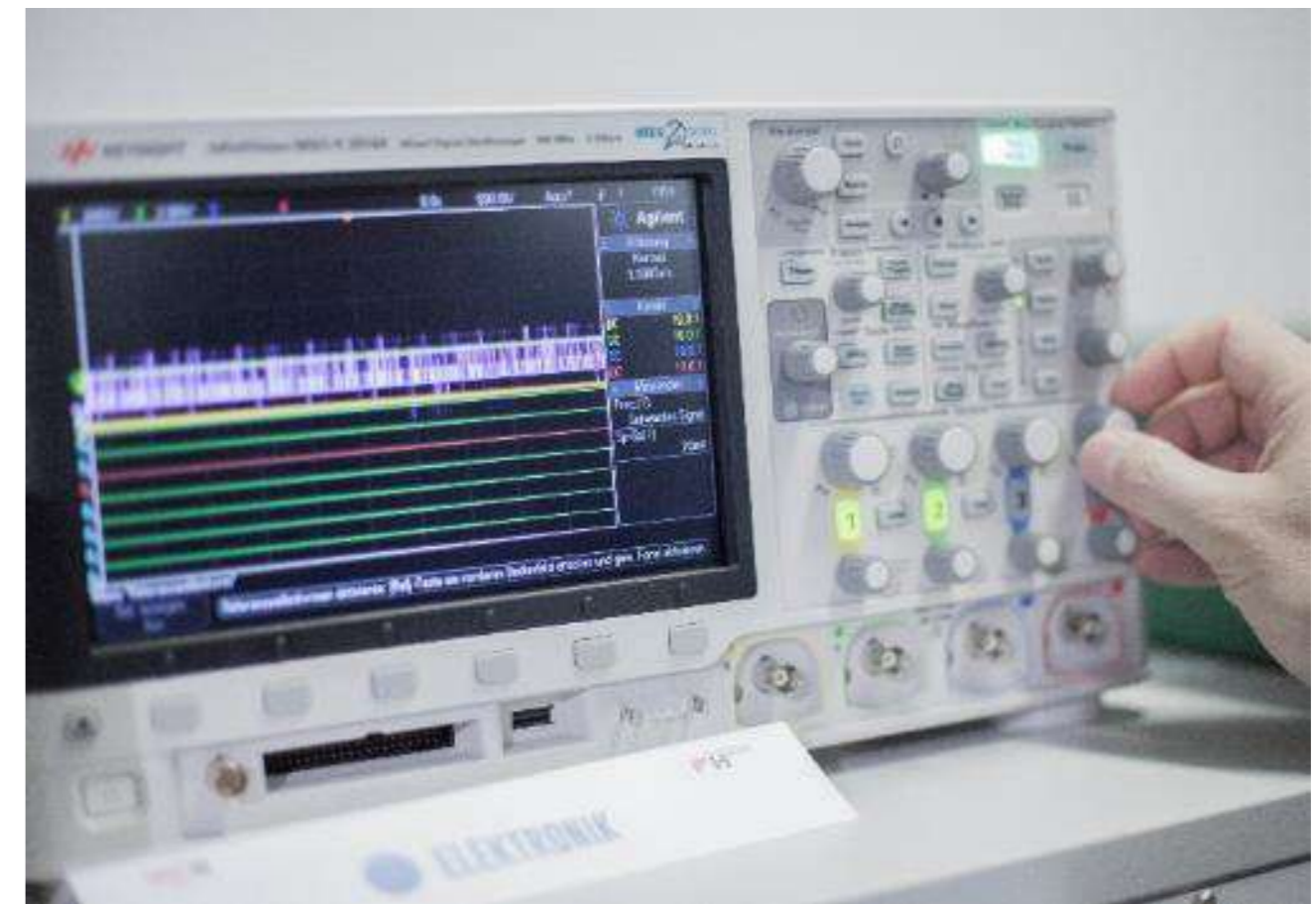
User Experience Lab
Transmission Lab
Electronics Lab
Network Engineering Lab
RFID & Sport Telematics Measurement Lab



Augmented Reality &
Medical Image Processing Lab
Geoinformation Lab
Instrumental Activities of Daily Living Lab
Medical Engineering Lab
Multimedia Technology Lab



Production Technology
Fluid Mechanics
Innovation Workshop Carinthia
Lightweight Construction Lab
Smart Lab Carinthia
Thermodynamics Lab



Mechatronics & Automation Lab
Online Labs Austria
Microelectronics Lab
System Integrations Lab
Realtime Imaging and
Signal Processing Labor



Battery Lab
Electronic Fundamentals Lab
Industrial Robotics Lab
Circuit Boards Lab

Innovation & Entrepreneurship



Lab for Strategy Development and Innovation Management

- Brainstorming, strategy development
- Business modelling, business planning
- Concept development

InnovationsWerkstatt
KÄRNTEN

Lab for Prototyping & Component Production

- Product development
- Prototypes production
- Feasibility Studies

smart lab
CARINTHIA
RAPID PROTOTYPING UNIT • ENGINEERING SERVICE KÄRNTEN | VILLACH

Lab for Prototype Assembly and Testing

- Prototype assembly
- Test series set-up
- Protection from industrial espionage

gründer garage
FACHHOCHSCHULE KÄRNTEN



www.cuas.at