The University of Wuppertal welcomes you!

Speaker: Victoria Grimm
BUW International Center
March 10th, 2026

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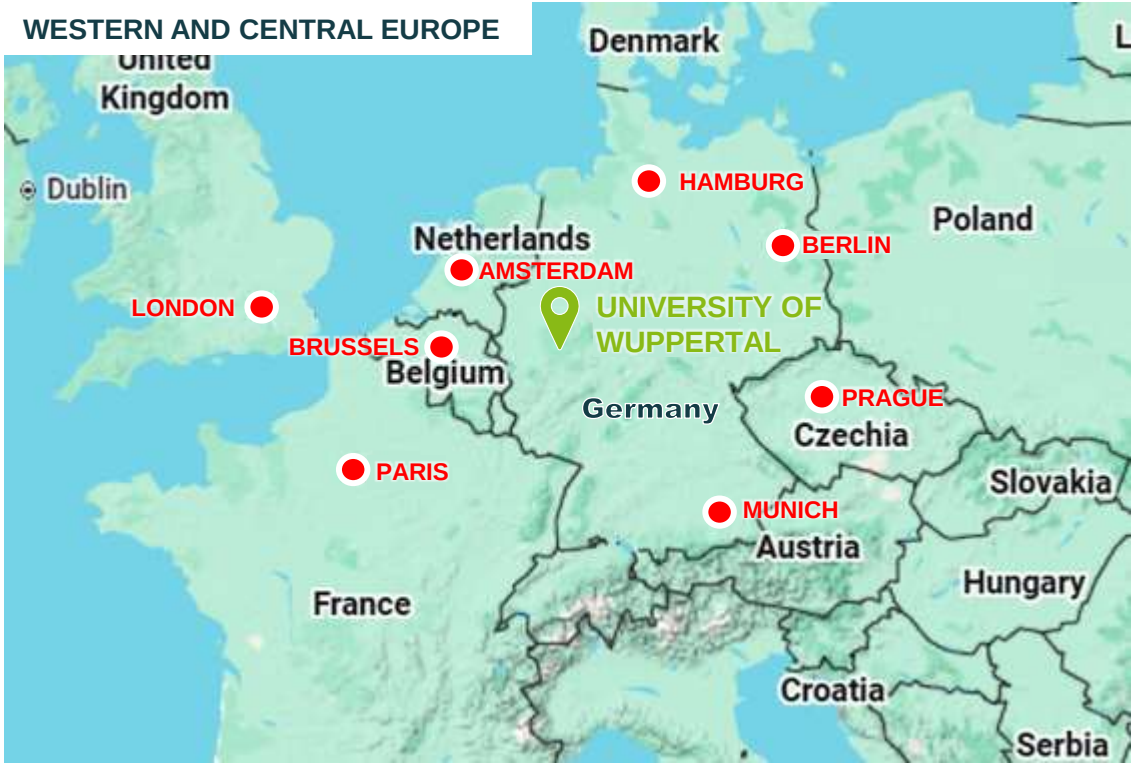
UNIVERSITÄT
WUPPERTAL

Where is Wuppertal?



Central location in Europe

Wuppertal is a large city with around 350,000 inhabitants and is located in the heart of Europe. Europe's largest metropolitan area, the Rhine-Ruhr, is right on the doorstep, making the region a great place to live: for studying, working and leisure.

Distances by train to cities and airports:

Düsseldorf: ca. 30 min
Cologne: ca. 45 min
Frankfurt: ca. 2,5 hours
Brussels: ca. 3 hours
Amsterdam: ca. 3,5 hours
Paris: ca. 4 hours

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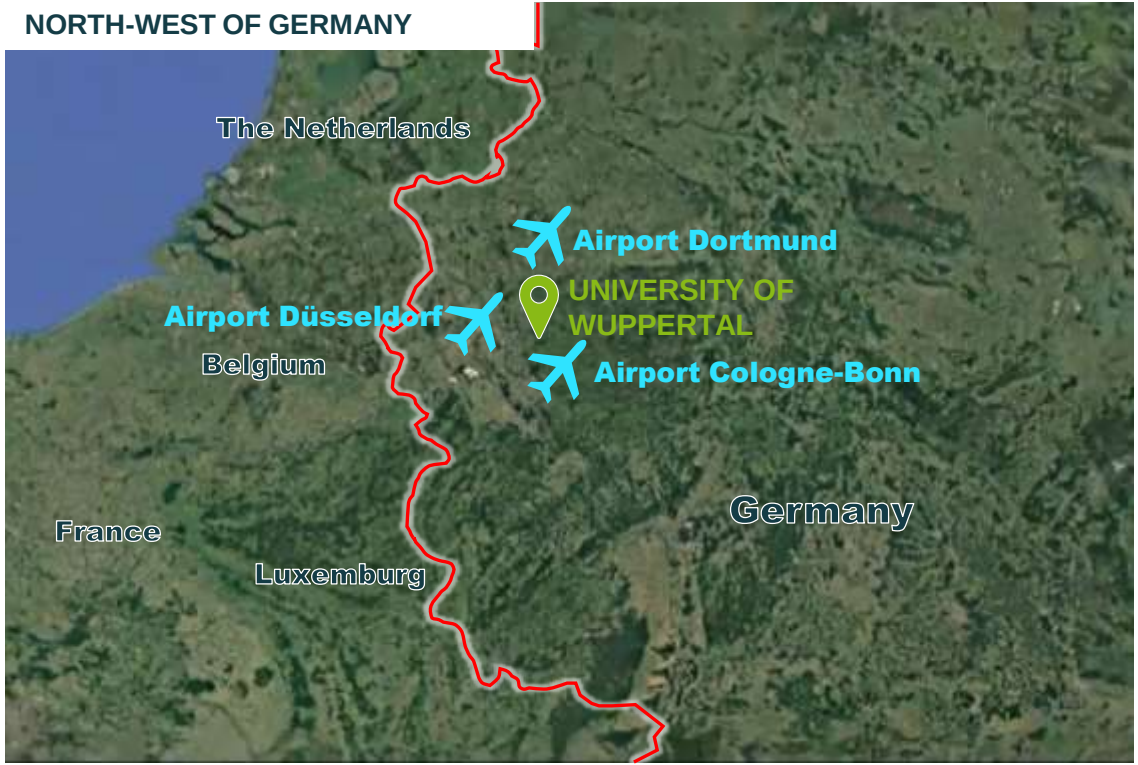

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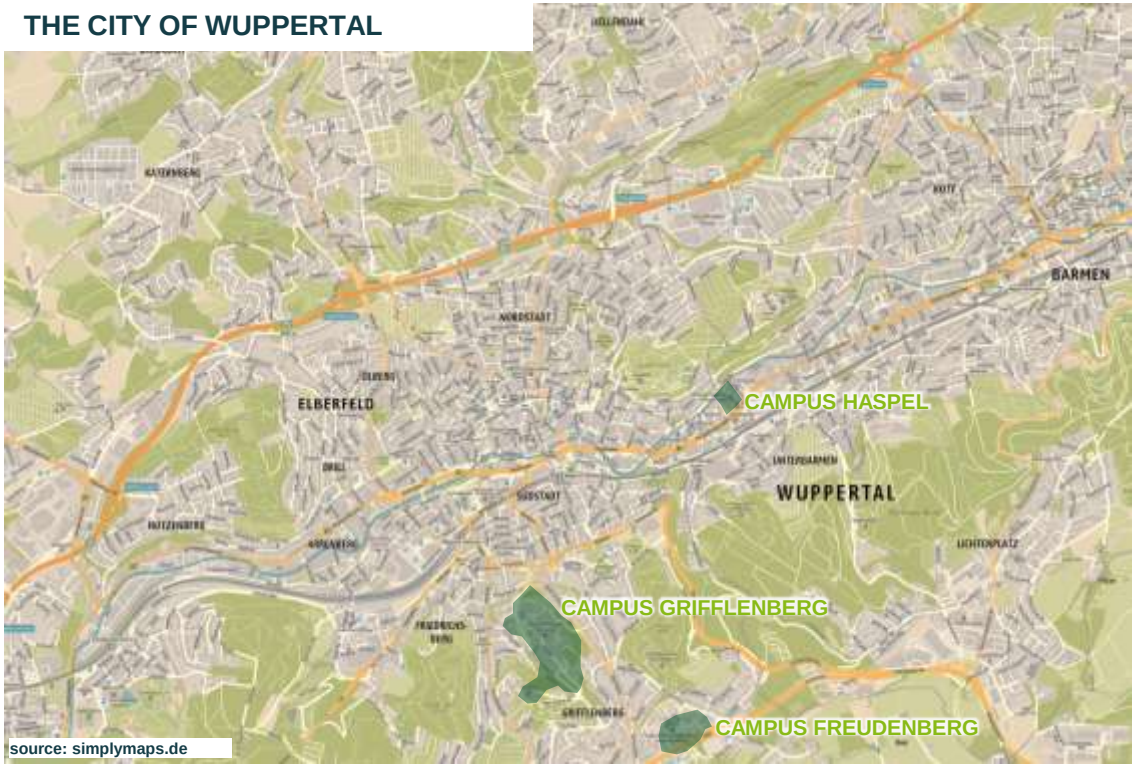
BERGISCHE UNIVERSITÄT WUPPERTAL

Where is Wuppertal?

THE CITY OF WUPPERTAL



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Wuppertal is… unique.

Wuppertal is famous for its **iconic suspension railway**, the oldest of its kind in the world. Students can easily explore the city by bus and suspension railway. The semester fee (appr. 340€) includes the ‘Deutschlandticket’, which allows you to travel throughout Germany on regional trains and city transport.

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Wuppertal is… world-famous.

The city has a diverse cultural scene with numerous theatres, museums and galleries. **Pina Bausch's dance company and Tony Cragg's Waldfrieden sculpture park** are internationally renowned and attract visitors from all over the world.

The latest attraction in Wuppertal: **murals** – 24 large-scale murals by artists from all over the world can be found in various locations throughout the city.

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Wuppertal is… green.

As Europe's greenest city, Wuppertal is an ideal place for outdoor enthusiasts: with parks, forests, hiking trails and cycle paths – such as the Nordbahntrasse here – the region is ideal for outdoor leisure activities and relaxation in nature.

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Wuppertal is… sustainable.

Wuppertal is known for its commitment to sustainability, the circular economy and innovation. In 2023, it hosted the international Solar Decathlon university competition. The Wuppertal Institute is one of the leading think tanks for sustainability and transformation research, which aims to create a climate-friendly and resource-efficient world. What's more, the Circular Valley initiative actively promotes research in the fields of renewable energies, climate protection and social development.

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Wuppertal is… affordable.

Compared to larger German cities such as Berlin, Munich, Düsseldorf or Cologne, rents for flats in Wuppertal are lower.The Wuppertal Student Services Association offers 1,217 places in seven modern halls of residence. There are also a total of nine canteens and cafeterias on all three campuses in Wuppertal, as well as one pub (with long opening hours) and one kiosk on the main campus.

Website Studierendenwerk

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Wuppertal is… international.

The city hosts a diverse and international population, more than 45% of them have a migration background. Wuppertal embraces a **multicultural atmosphere**, and international students (about 2,000 each semester) will find numerous opportunities to connect with peers from all over the world.

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What the University of Wuppertal offers for students

- application via **uni:assist, admission via TestAS** (+ language proficiency), no “Studienkolleg” needed
- consulting for interested students and assistance for the application process
- pre-study and accompanying **courses in German as a foreign language of all levels**, also online and/or in the evening,
- Student counselling with individual consultations and workshops on time and self-management, stress management, exam anxiety, concentration techniques and much more an International Students Team that offers **social evenings and excursions in the region**,
- an International Office that organizes **Welcome Events**,
- a Buddy Programme with a **mentor at your side,**
- Opportunities for **funding** your studies through student jobs, the Deutschlandstipendium scholarship or graduation scholarships,
- **intercultural and job trainings**, an annual recruiting day, monthly excursions and contacts with local businesses, individual career counseling also on the weekends
- a service team from the city of Wuppertal that **places international students in training or work**,
- a local start-up that **connects international professionals in our region** with get togethers and events,
- University sports offer **more than 60 types of sports** and they host **student health weeks** twice a year,
- the **university church** offers get togethers – **open for all confessions,** and much more.

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And after studying? Local Job opportunities

Around 38,000 companies are based in the Bergisch city triangle of Wuppertal-Remscheid-Solingen and around **700,000 companies in North Rhine-Westphalia** – many of which can be reached daily by public transport from Wuppertal.
Municipal services (House of Integration, Service Centre for Labour and Skilled Workers) **help refugees and immigrants find jobs or training places**. The start-up Workstadt promotes a sense of community among all international employees in the city so that everyone feels at home.

Selection of companies based in Wuppertal that operate internationally and have subsidiaries worldwide:

- Toolmaking: Wera Tools, Knipex
- Pharmaceuticals and life sciences: Bayer (Aspirin was invented in Wuppertal)
- Automotive technology & electronics: Aptiv (operates in more than 40 countries)
- Broadcasting and media communications technology: Riedel Communications (supplies communications technology for the Oscars, the Super Bowl, Formula 1 and other major events)
- Vacuum and compressor technology: Gebrüder Becker
- Health and hygiene products: Johnson & Johnson (represented in over 60 countries)
- Cross-industry (membranes, materials): 3M

Computer Simulation in Science (CSiS) Master`s Degree Programme

Speaker: Dmytro Potikha
CSiS Secretary
March 10th, 2026

CSiS Master´s Programme
School of Mathematics
and Natural Sciences

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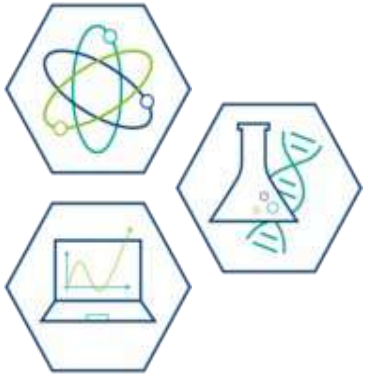
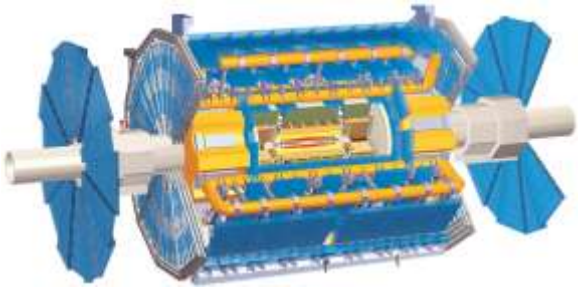
Computer Simulation in Science Master‘s Degree Programme

- Taught fully in **English**
- Start in winter semester only
- **No tuition fees,** but a semester fee of currently €337 which includes “DeutschlandTicket” public transport pass (as of summer semester 2026)
- Accredited in 2008 and re-accredited in 2013 byAQAS and in 2020 by ZeVA



- **Interdisciplinary**: Mathematics, Computer Science and Natural Sciences
- **Research-oriented** in terms of university/PhD career, as well as research departments in industry
- Cooperation with engineering departments for specializations modules



- CSiS Secretary & International Office of the School of Mathematics and Natural Sciences: **Dmytro Potikha**

Curriculum

Semester	Main Modules			Specialization Modules	Total
	Computer Simulation	Computer Science	Numerical Methods		
1	11 ECTS	9 ECTS	8 ECTS	--	28 ECTS
2	13 ECTS	3 ECTS	8 ECTS	8 ECTS	32 ECTS
				1st year total:	**60 ECTS**
3	12 ECTS	4 ECTS	6 ECTS	8 ECTS	30 ECTS
4	Master's Thesis			30 ECTS	30 ECTS
				2nd year total:	60 ECTS
				Overall total:	**120 ECTS**

Compulsory Modules

Term	Computer Simulation	Computer Science	Numerical Methods
1	Introduction to Computer Simulation Lab Course I Block Course on Mathematical Foundations	Modern Programming Virtualization I or Introduction to HPC	Numerical Analysis and Simulation I or Advanced Numerics or Mathematical Machine Learning
2	Data Analysis Parallel Algorithms	Tools or Bayesian Learning	Numerical Methods 2a: Numerical Analysis and Simulation II or Numerical Methods 2b: Numerical Methods in Classical Field Theory and Quantum Mechanics
3	Introduction to Computer Simulation II Lab Course II	Image Processing and Data Visualization or Virtualization II	Numerical Linear Algebra

16 ECTS: 8 in 2nd and 8 in 3rd semester:

- Atmospheric Physics
- Computational Electromagnetics
- Computational Finance
- Computational Fluid Mechanics
- Detector Physics
- Imaging in Medicine
- Molecular and Materials Modelling
- Theoretical Particle Physics

Specializations Overview

Atmospheric Physics (AtmP)

Students acquire an expertise and skills on specific topics of atmospheric physics, atmospheric chemistry, measurement techniques as well as numerical modelling. They also take part in the Summer School on Chemistry and Dynamics of the Atmosphere at the Research Centre Jülich. Students study the relation of atmospheric research to adjacent disciplines, they get acquainted with state-of-the-art measurement techniques and their applications.

more info: https://csis.uni-wuppertal.de/en/program-curriculum/specializations/atmospheric-physics/

Computational Electromagnetics (CEM)

Computational Electromagnetics focuses on the computer-aided simulation of electromagnetic field distributions and additional multi-physically coupled field effects in complex technological and biological systems. Usual applications involve the simulation of complex energy transport and conversion systems in power engineering as well as realistic 3D simulations of complicated electromagnetic compatibility problems. Discrete electromagnetic field theory: discrete field formulations, practical applications for electromagnetic/multiphysical field problems.

more info: https://csis.uni-wuppertal.de/en/program-curriculum/specializations/computational-electromagnetics/

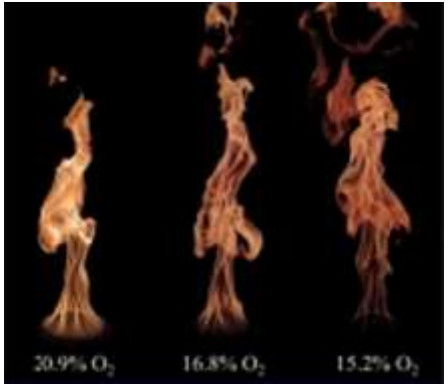
Specializations Overview

Computational Finance

Students learn how to model in finance, develop and use simulation tools and judge their efficiency and practicability in front offices. They study modelling and numerical simulation of problems in financial mathematics using stochastic and partial differential equations, Monte Carlo simulations, transformation techniques, semi-analytic Fourier methods, stochastic correlation approaches, symplectic integration methods in finance. Master theses are in general in cooperation with financial institutes and companies for energy supply.

more info: https://csis.uni-wuppertal.de/en/program-curriculum/specializations/computational-finance

Computational Fluid Mechanics



CFM specialization consists of Computational Fluid Dynamics, Radiative Heat Transfer, and elective modules as Pedestrian Dynamics or Fire Simulation. Students master the basics of fluid dynamics, apply different models to simulate flows, enabling the critical evaluation of CFD results. In Pedestrian Dynamics they learn basic concepts for simulation of pedestrians (movement, routing, interactions), in Fire Simulation students develop the mathematical, physical and chemical understanding needed for the description of smoke and fire propagation. They learn how to use the software FDS (Fire Dynamics Simulator) and analyse the simulation data.

more info: https://csis.uni-wuppertal.de/en/program-curriculum/specializations/computational-fluid-mechanics/

Specializations Overview

Detector Physics

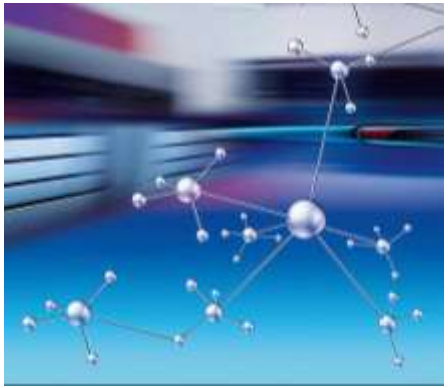
Students learn the physical principles and the components of particle accelerators. They perform simple computations of linear beam optics and study how to describe the interaction of different forms of particle radiation with matter, being able to apply this knowledge to techniques, methods and components of modern detectors and experiments in particle and astroparticle physics. Other applications are reciprocal space probes in condensed matter physics and spectroscopic imaging. The working group cooperates with CERN, ATLAS experiment and the North Rhine-Westphalian Competence Network for High-Performance Computing and other labs.

more info: https://csis.uni-wuppertal.de/en/program-curriculum/specializations/detector-physics

Imaging in Medicine

Specialization covers the tomographic and other imaging processes, focuses on imaging with X-ray ionising radiation, CT, SPECT, PET. Computer-based simulation are introduced to compare different physical phenomena. Lectures present the concept and physical background of various devices applied during imaging starting from the data acquisition till the reconstruction of tomographic images. Students learn about the application of image analysis in medicine and biology, starting from the basic description and basic operations on images extending to image registration and fusion.

more info: https://csis.uni-wuppertal.de/en/program-curriculum/specializations/imaging-in-medicine/



Molecular and Materials Modelling

Students learn to describe material properties from the microscopic to the macroscopic scale. They get acquainted with the fundamental concepts of quantum mechanics, thermodynamics and essential knowledge in quantum chemistry and statistical thermodynamics. Students apply numerical methods for the simulations of materials at the molecular level. They study such concepts as quantum chemistry and molecular dynamics, acquiring skills to perform atomistic simulations of complex systems using modern software.

more info: https://csis.uni-wuppertal.de/en/program-curriculum/specializations/molecular-and-materials-modelling

Theoretical Particle Physics

Students study different concepts of theoretical particle physics, including the Standard Model of Elementary Particle Physics, Many Particle Theory, Statistical Field Theory, Cosmology and General Relativity, Quantum Field Theory, and Advanced Quantum Mechanics. They will become familiar with the mathematical description of elementary particles and forces of nature and the numerical methods necessary to investigate them using high performance computing. The master theses are often related to the field of "lattice QCD", the numerical simulation of strong nuclear interactions.

more info: https://csis.uni-wuppertal.de/en/program-curriculum/specializations/theoretical-particle-physics/

Scientific Requirements for Admission to CSiS Master´s Degree Programme

- Bachelor‘s or equivalent degree (minimum **180 ECTS**) in one of the following field:
  - Applied Science
  - Business Mathematics
  - Chemistry
  - Electrical Engineering
  - Mathematics
  - Mechanical Engineering
  - Safety Engineering
  - Physics
  - or a related field

with a **grade of at least 3.0** in the German ranking system

- Advanced knowledge in the field of specialization chosen corresponding to **24 ECTS** credits (or 13%)
- Knowledge of at least one programming language corresponding to **8 ECTS** credits (or 4%)
- Knowledge of mathematics corresponding to a Bachelor of Science/Engineering (refreshed in the Block Course on Mathematical Foundations)

Timeline for start in winter semester 2026/27

1. Formal Application: **November 15th – March 31st**

Send your online application to **uni-assist e.V.**
Upload of all relevant documents. A list of documents needed is available on our website:
https://www.csis.uni-wuppertal.de/en/application/

2. Scientific Check: **November 15th – May 15th**

Applicants will be invited for the digital qualification evaluation exam (QEE), which designed to check the Bachelor´s knowledge on numerical methods, linear algebra and basics of analysis.
After the successful results of QEE test (50% correct answers or more) the satisfaction of scientific requirements is checked by the CSiS Admission Committee based on documents, submitted to uni-assist: Bachelor transcripts, Scientific Check Sheet (template is available on the website), an optional CV etc. After that you will receive an e-mail with the decision.

3. Study Admission: **until June 15th, 2026**

International Student Experiences at BUW

Speaker: Viet Ninh Nguyen
CSiS Student
March 10th, 2026

- Applications and Specializations
- Study Curriculum
- Exams and Requirements
- Dormitory and House Renting in Wuppertal
- Minijobs
- Extracurricular Activities

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Application

- Self-assesment exercises: Basic programming
  https://csis.uni-wuppertal.de/fileadmin/mathe/csis/Application/Scientific_Check_Sheet_Form_2023.pdf

- Scientific Requirements for each specialization
  https://csis.uni-wuppertal.de/en/application/requirements/

- A digital entrance test on math and programming skills
- APS for Vietnamese, Chinese, Indian students
- Language certificates
- Uni-assist

Computational Finance

What we study in CSiS?

Solving problems in real world that are formulated as mathematical equations (linear and nonlinear differential equations(DEs), etc.) using numerical methods
Combination of Computer Science

In Finance

Using numerical methods to solve Partial DEs, Stochastic DEs to compute option prices

Study Scope

- Refer to Modulhandbuch https://csis.uni-wuppertal.de/en/program-curriculum/module-reference-book/
- Programming languages: C++, Matlab, Python

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Exams and requirements

- Most subjects have homeworks and require 50% complement of homework to participate in final exams
- Homework includes theoretical (math) exercises and programming lab exercises
- Exams can be oral or written based on the number of students/specific courses
- Check specific requirements for each course in Moodle

Dormitory and Housing

Applying for dorm

https://www.hochschul-sozialwerk-wuppertal.de/wohnen/wohnheime.html

Close to uni and cheap

Searching online

Kleinanzeigen

https://www.kleinanzeigen.de/

WG-gesucht

https://www.wg-gesucht.de/

Better to search for areas near Hauptbahnhof

Minijobs

- Student jobs in Wuppertal
https://www.stellenwerk.de/wuppertal?pagination%5Bstart%5D=0&filters%5BemploymentMode%5D%5Bid%5D%5B%24in%5D%5B0%5D=8

- Job portal of the university

- Linkedin, Xing, Stepstone

- Networking

- Minijobs websites

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International Student Groups

- In Touch Projekt

  https://www.uni-wuppertal.de/de/internationales/internationales-profil/in-touch-projekt/

- International students Whatsapp groups

  Planning extracurricular activities

  Weekly gatherings

  Answering questions regarding visa, housing, etc.

Thank you for your attention!

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University of Wuppertal: International Office

E-Mail for general questions: intouch@uni-wuppertal.de
E-Mail for questions regarding application and admission: intsek@uni-wuppertal.de
Website: https://www.uni-wuppertal.de/en/international/international-students/

Computer Simulation in Science Master‘s Degree Programme

Dmytro Potikha | CSiS Secretary

Address: Gaussstrassse 20, Wuppertal 42097 Germany
Campus Grifflenberg, F.10.05
E-mail: potikha@uni-wuppertal.de; csis@uni-wuppertal.de
Phone: +49 202 439 2594
Website: csis.uni-wuppertal.de

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CSIS MASTERS JOURNEY

Exploring Academic Growth leading to Research and Industrial Milestones

Peter Ngure

dSPACE

Where it All Began!

- **Born and raised in Nairobi, Kenya**
- BSc in Electrical & Electronics Engineering – Technical University of Kenya
- Early career: Technical Sales Engineer in industrial automation (KHS East Africa)
- Loved solving customer problems, but I felt a **strong pull toward AI & imaging technologies**
- **Realization:** *If I wanted to build the future, I needed deeper technical expertise*

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The Transition: Not Easy, But Worth It

- Moving to Germany was **exciting but challenging**
- Adapting to the German academic culture
- Balancing demanding coursework with student jobs
- Courses like **Computer Simulation, Monte Carlo Methods, Numerical Methods** – tough but incredibly exciting
- **Discovery phase:** *My interests sharpened toward data analysis, machine learning, and medical imaging*

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From the Classroom to Real-World Innovation

dSPACE

- Student assistant at **TMDT → ML for smart city applications**
- Strengthened research skills and practical ML experience
- Internship + Master Thesis at **Volkswagen Group Innovation Centre**
- Thesis: "**Seat Pressure Distribution Analysis Using Machine Learning to Recognize the Action of the Seat Occupant**"
  - Hands-on work with cutting-edge industry teams
  - Confidential project, but deeply impactful for my growth

VOLKSWAGEN

AKTIENGESELLSCHAFT

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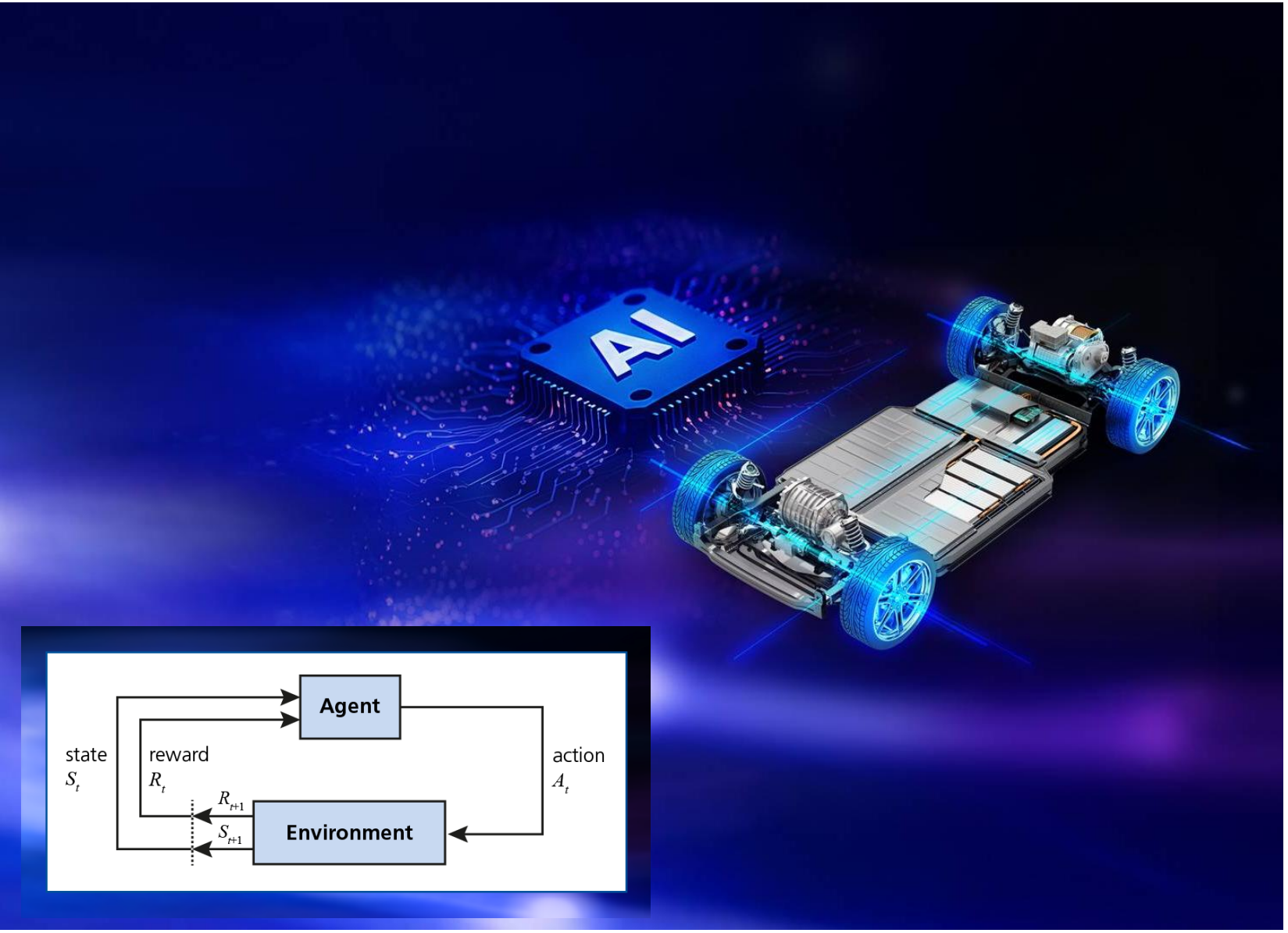
Turning Skills Into Impact

dSPACE



- Joined **dSPACE GmbH** after graduation
  - **A global leader in simulations technology**
- Product Manager in Automated Driving Software Solutions (ADSS)
- Work on:
  - **RTMaps** → High-performance middleware for sensor fusion, robotics, ADAS, HAD
  - **RTAG** → Live scenario annotation for complex sensor data
- Daily application of everything from CSiS:
  - **Simulation**
  - **Data Analysis**
  - **Machine Learning**
  - **Computer Science**
- Collaborate with engineering & automotive teams worldwide

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Is CSiS Worth It? My Answer: Absolutely.

- The program is demanding — **you must be prepared to work hard**
- You'll face challenges, especially at the beginning
- But you will gain rare interdisciplinary skills:
  - **Simulation**
  - **Data analysis**
  - **Computer Science**
  - **Machine learning**
- You'll access research labs, innovative companies, and future-driving technologies
- Most importantly: It's a transformative journey
- ***"I would choose the CSiS program again without hesitation."***

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THANK YOU FOR YOUR ATTENTION

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