

Information on German Host Institution

COMBINED STUDY AND PRACTICE STAYS FOR ENGINEERS FROM DEVELOPING COUNTRIES (KOSPIE) – TUNISIA

1. Name of Institution:

Technische Universität Dresden





Visit our website: https://tu-dresden.de/why-tud

TU Dresden's program website DAAD KOSPIE Tunisia:

https://tu-dresden.de/studium/vor-dem-studium/internationales/stipendien/daad-kospie-tunesien

2. General Information on Institution:

2.1 Faculties and number of full-time professors:

Technische Universität Dresden is one of the largest technical universities in Germany (with more than 28,000 students from 125 countries, 8,000 full-time employees, including appr. 540 professors) and was awarded the **"University of Excellence"** title.

With **17 faculties in five Schools** (Science, Humanities and Social Sciences, Engineering, Civil and Environmental Engineering, Medicine), TU Dresden offers a wide range of 119 degree courses.

Faculties offering engineering subjects including IT:

Faculty of Electrical and Computer Engineering

Faculty of Computer Science

Faculty of Mechanical Science and Engineering

Faculty of Architecture

Faculty of Business and Economics

Faculty of Civil Engineering

Faculty of Environmental Sciences

"Friedrich List" Faculty of Transport and Traffic Sciences



Institutes and Chairs involved in the DAAD KOSPIE programme 2025:

It is **not necessary** for the applicants to **contact a desired academic supervisor** at the time of application. In the **DAAD application form**, only the **name of the desired Institute (or Chair)** and the **name of the desired supervisor** for the study stay at TU Dresden have to be indicated. The matching, i.e. the concrete request for supervision, is done by the International Office of TU Dresden for all applicants.

The following **Institutes and academic supervisors** are potentially available to supervise the Tunisian KOSPIE students. A list of specific projects that are available exclusively for DAAD KOSPIE Tunisia scholarship holders can be found below.

An **updated list** can be found on our Program website:

https://tu-dresden.de/studium/vor-dem-studium/internationales/stipendien/kospie-daad/daad-kospie-tunesien

Faculty of Electrical and Computer Engineering

Institute: Institute of Circuits and Systems

Chair of Highly-Parallel VLSI Systems and Neuro-Microelectronics

Academic Proi

Prof. Dr.-Ing. habil. Christian Georg Mayr

supervisor:

direct contact: Dr. Johannes Partzsch

Field of research: Machine Learning, Neuromorphic Hardware

1. Efficiently modeling real-world data with recurrent neural networks

Research topic: 2. Event-based sensor processing using the SpiNNaker2 neuromorphic multi-

processor system

Capacity: up to 2 scholarship holders

Other available topics at the Faculty of Electrical Engineering can be found on the following

website: https://tud.link/4sxepq

Faculty of Computer Science

Institute: <u>Institute of Computer Engineering</u>

Chair: Chair of Adaptive Dynamic Systems

Academic

supervisor:

Prof. Dr.-Ing. Diana Goehringer

Field of Computer Engineering, Computer Architectures, Embedded Systems,

research: Hardware/Software Codesign, Robotics, Machine Learning

Research topic: (Working titles, can be adapted to the candidates background) Embedded Systems

for Robotics, Domain-Specific Computer Architectures for Machine Learning

Capacity: up to 4 scholarship holders



Other available topics at the Faculty of Computer Science can be found on the following website: https://tud.link/kyrvdh

Faculty of Mechanical Science and Engineering

Faculty of Architecture

Faculty of Business and Economics

Faculty of Civil Engineering

Faculty of Environmental Sciences

"Friedrich List" Faculty of Transport and Traffic Sciences

Institute: Institute of Transport and Economics

Chair: Chair of Econometrics and Statistics, esp. in the Transport Sector

Academic

supervisor:

Prof. Dr. Ostap Okhrin

Field of

research:

Artificial Intelligence, RL

Research topic:

Maschine Learning in Transportation (The topic is relatively flexible. The team

currently works with the traffic simulators using real data filmed with drones.)

Capacity: up to 2 scholarship holders

2.2 Research institutions, research facilities and fields of research:

TU Dresden covers a wide research spectrum in the Research Priority Areas (RPAs) Health Sciences, Biomedicine & Bioengineering, Information Technology & Microelectronics, Smart Materials & Structures, Energy, Mobility & Environment as well as Culture & Societal Change.

More information on research facilities and TU Dresden's research priority areas can be found at https://tu-dresden.de/forschung/forschungsprofil?set_language=en

Furthermore, the unique <u>DRESDEN-concept</u> provides an excellent research background for all things engineering and science-related. The DRESDEN-concept research alliance currently comprises 33 research institutions, including TU Dresden and local institutions of the Max Planck Society, the Leibniz Association, the Helmholtz Association and the Fraunhofer Society, as well as renowned, cultural institutions who conduct research.

2.3 Institution has been accredited by:

https://www.hochschulkompass.de/en/higher-education-institutions.html

2.4 Does your institution follow the Code of Conduct for exchange programmes?

Yes



2.5 Welcome programmes for exchange students:

Services for KOSPIE students:

- Welcome event
- French-speaking KOSPIE tutor to assist with administrative processes, help with the organisation of studies (e.g. setting up a timetable, registration for exams), and support students in personal matters (e.g. arrival and departure, accommodation, visits to the doctor)
- Intercultural training
- Cultural programme with excursions in the region
- Visits to companies and research institutions in Dresden
- Support with finding accommodation in the student dormitory

Services for international students in general:

- Special info day at the beginning of the semester
- Accommodation in student dorms (single rooms in flat shares) near campus and reasonably priced
- Student canteens and cafeterias
- Tutor programme with individual help for all international students
- Buddy and mentoring programmes (general and on faculty-level), student-led activities, and welcome events organised by participating faculties and schools
- Free credits for language courses for TUD students that can be used to continue learning German or to learn other languages. See https://www.sprachausbildung.tu-dresden.de/sprachen/deutsch_als_fremdsprache/
- Dresden University Sports Centre (DHSZ), see https://tu-dresden.de/dhsz

2.6 Location of institution:

Dresden, capital of the Free State of Saxony, Germany

2.7 Special attractions for young people:

Affectionately known as 'Florence on the Elbe', Dresden counts among Germany's most liveable cities. It is home to famous art collections and museums, a magnificent historic centre as well as theatres, concert halls, and the world-renowned Semper Opera. Trendy pubs and student clubs in the city's Neustadt district attract young people from all over the world. The beautiful Elbe valley, the Elbe Sandstone Mountains, and the Erzgebirge/Ore Mountains provide limitless outdoor adventure opportunities. Other cities such as Berlin, Leipzig, Prague (Czech Republic) and Wroclaw (Poland) are easy to reach by car or train.

For more see: https://tu-dresden.de/why-tud







2.8 Costs of living (dorms, costs at university cafeteria etc.):

About **800€/month in total** (student dorms 250-400€/month, lunch at university cafeteria 3-5€, semester contribution/fee 290 EUR/semester, a 'Semester Ticket' covering public transportation costs in Dresden is included)

3. Combined study and practice stays for engineers from developing countries (KOSPIE) – Tunisia:

3.1 Faculties participating in the exchange programme and degree courses offered (course language?):

The following **institutes and academic supervisors** are potentially available to supervise the Tunisian KOSPIE students:

Faculty of Electrical and Computer Engineering

Faculty of Computer Science

Faculty of Mechanical Science and Engineering

Faculty of Architecture

Faculty of Business and Economics

Faculty of Civil Engineering

Faculty of Environmental Sciences

"Friedrich List" Faculty of Transport and Traffic Sciences

Within the frame of DAAD KOSPIE Tunisia, scholarship holders carry out research at an institute or chair at TU Dresden (English-speaking academic supervisors).

The aforementioned faculties offer **degree programmes** on **undergraduate** (Bachelor's and Diplom) and **graduate** (Master's, Diplom) level. The course language depends on the chosen programme: German, English, or a combination of both.

German-language degree programmes:

Waste Management and Contaminated Site Treatment (MSc), Railway System Engineering (MSc), Civil Engineering (Diplom), Electrical Transportation Systems (MSc), Electrical Engineering (Diplom), Computer Science (BSc, MSc, Diplom), Information Systems Engineering (Diplom), Air Transport and Logistics (MSc), Mechanical Engineering (BSc, Diplom), Mechatronics (Diplom), Media Computer Science (BSc, MSc), Spatial Development and Natural Resource Management (MSc), Renewable Energy Systems (Diplom), Textile and Clothing Technology (MSc), Process Engineering and Natural Materials Technology (BSc, Diplom), Transport Engineering (Diplom), Business Informatics (Diplom), Economics and Engineering (Diplom)

English-language degree programmes:

ACCESS - Advanced Computational and Civil Engineering Structural Studies (MSc), Air Transport and Logistics (MSc), Cartography (MSc), Computational Modeling and Simulation (MSc), Distributed Systems Engineering (MSc), Ecosystem Services (MSc), Hydro Science and Engineering (MSc), Nanoelectronic Systems (MSc), Public and International Economics (MSc), Technomathematics (MSc), Transportation Economics (MSc), Tropical Forestry (MSc)

For more information see https://tu-dresden.de/sins



3.2 Transcripts of records can be issued in the following languages:

German and English

3.3 Students of the following degree courses may join the exchange programme:

Students in the Engineering Sciences (including IT) at government or government recognised universities in Tunisia (Mastère de recherche or diplôme)

3.4 Tuition waivers:

TU Dresden is a public university and does not charge any tuition fees. There is a semester fee of approx. 290€/semester that has to be paid by all students and includes a ticket for public transport in all of Germany and rental bikes from mobibike in Dresden.

3.5 Near-by companies with which co-operations are withheld:

Infineon, Global Foundries, Volkswagen, Siemens, GlaxoSmithKline GmbH and many more.

TU Dresden is a member of many networks, for example Silicon Saxony e.V. (https://www.silicon-saxony.de/en/home/) and Biosaxony (https://www.biosaxony.com/en). Within DRESDEN-concept, TU Dresden cooperates with various Fraunhofer, Max Planck, Leibniz and Helmholtz research institutes in Dresden.

3.6 Established partnerships with the following Tunisian higher education institutions and faculties:

Current (research) cooperation:

- Université La Manouba, Ecole Nationale des Sciences de l'Informatique ENSI (research cooperation)
- Université de Sfax (research cooperation)
- University of Carthage, Bizerte (research cooperation)

Past (research) cooperation:

- Université La Manouba, Ecole Nationale des Sciences de l'Informatique ENSI (research cooperation funded by the DAAD, TUD: Chair for Compiler Construction, Computer Science Department, cluster of excellence cfaed – "Center for Advancing Electronics Dresden", 04/2019 – 12/2019)
- Université Virtuelle de Tunis / Université de Sousse / Université de Gabès (research cooperation 2013 – 2016, TUD: Centre for the Study of Central and Eastern Europe)
- cooperation agreement with Université de Gabès (expired by the end of 2018)
- Université de Sfax, ENIS (research cooperation 2013 2015, TUD: Chair of Physical Geography, Institute of Geography)
- Université de Gabès / Université de Sousse / Université de Gafsa / Université de Kairouan (research cooperation 2010 2013, TUD: Centre for the Study of Central and Eastern Europe)

3.7 Interest in exchange with the following Tunisian higher education institutions (please specify faculties)

- Université de Carthage (Ecole Nationale d'ingénieurs de Bizerte, Institut Supérieur de Construction et d'Urbanisme, Institut Supérieur des Technologies de l'Environnement, de l'Urbanisme et du Bâtiment)
- Université de Tunis El Manar (Ecole Nationale d'Ingénieurs de Tunis, Institut Supérieur d'Informatique)
- **Université de Sfax** (Ecole Supérieure d'Electronique et des télécommunications, Ecole Nationale d'Ingénieurs de Sfax)



- Université de Sousse (Ecole Nationale d'Ingénieurs de Sousse, Institut Supérieur d'Informatique et des Technologiesde Communication de Hammam Sousse, Institut Supérieur du Transport et de la Logistique Sousse)
- Université La Manouba UMA (Ecole Nationale des Sciences de l'Informatique ENSI)

3.8 Further remarks/special services:

Study period at TU Dresden: **1 February 2025 – 31 July 2025** (an earlier or later start is not possible)

In their application, applicants have to **specify an Institute or Chair at TU Dresden** in which they would like to carry out their research. The **research areas of the chosen institutes or chairs** should be related to the applicant's study course in Tunisia and especially with the applicant's end-of-year project (projet de fin d'études).

Information about **Institutes and Chairs involved** in the DAAD KOSPIE programme at TU Dresden and the **application procedure** is available at the following website:

https://tu-dresden.de/studium/vor-dem-studium/internationales/stipendien/daad-kospie-tunesien?set_language=en

3.9 What language skills are required?

English (at least B1)

4. Responsible contact person:

4.1 Contact person at university-level and/or at faculty level

Peter Rosenbaum Head of the Staff Unit International Affairs / International Office Technische Universität Dresden

4.2 Contact person student coordinator/advisor

Technische Universität Dresden International Office International students / Scholarship Programmes

Ms. Cornelia Hesse (Coordinator) Phone: +49 (0)351 463 36330

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Ms. Luise Thalheim (Assistant) Phone: +49 (0)351 463 32442

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