

## Universität der Künste - Department of Building Planning & engineering (VPT) at the Institute of Architecture and Urban Planning



The Universität der Künste Berlin, situated in Berlin, Germany, is the largest art school in Europe. It is a public art and design school, and one of the four research universities in the city. The university is known for being one of the biggest and most diversified universities of the arts worldwide. The research work at the Department of Supply Planning and Supply Engineering focuses on the development of simulation-based methods, models and tools for energy-efficient building design, for the analysis of the building's physical behavior and for the energetic-functional behavior of the building services. Through the research work, the tools for energetic building and system simulation are to be better integrated into the design and planning processes of the building industry and made easier to use.

### Research internship and/or thesis in the field of Building Physics and Machine Learning

The Universität der Künste Berlin, VPT department, invites you to contribute to the FACaiDE (AI-supported analysis of energy efficiency of facades) project (<https://www.zukunftbau.de/projekte/forschungsfoerderung/1008187-2510>) to the project). The building sector plays a central role in the energy transition, yet detailed façade information required for accurate building energy assessment is often missing or incomplete. Recent advances in AI and computer vision enable the automated extraction of building-related parameters directly from street-level images and video data. Here comes the project FACaiDE, where the goal is to develop a mobile, edge-sensing device that performs real-time building analysis using hybrid AI and multi-modal sensing. We are looking for motivated students to take on the following thesis tracks for 2026:

City: Berlin; Starting date (earliest): At the earliest possible; Duration: The position is limited to 6 months; an extension is being sought.; Remuneration: -; Reference number: FACaiDE01

#### Tasks

The thesis explores a non-invasive method for estimating building façade energy efficiency parameters by combining infrared thermography, environmental sensor data, and simplified machine learning models. The aim is to reduce measurement time compared to conventional steady-state methods while maintaining acceptable accuracy. Both physics-based approximations and ML-based regression approaches are evaluated using transient thermal data collected under real outdoor conditions.

#### Requirements

- Bachelor's degree from the 4th semester onwards or Master's degree in a field such as energy and building technology, computer science, or a comparable subject.
- Background in Python and Machine Learning or willing to learn.
- Interest in implementation of theoretical physics in real world scenario.
- Basic knowledge of energy for buildings is a plus.

### **What we offer**

- International, inclusive and collaborative team.
- Active support in publishing findings in international journals and conferences.
- Flexible start date (immediately or by arrangement) and working hours.

### **Application**

Please submit your application, quoting "FACaiDE01 Student Position", along with the usual documents

to Prof. Dr. Christoph Nytsch-Geusen via email (in a single PDF document) to [nytsch@udk-berlin.de](mailto:nytsch@udk-berlin.de).

The Berlin University of the Arts (UdK Berlin) is committed to an equal opportunity and discrimination-free learning, teaching, and working environment and works to dismantle structural barriers (such as physical, linguistic, racial, age-related, gender-specific, heteronormative, and others). It aims to increase the proportion of women by hiring and promoting qualified women, particularly in leadership positions and in areas where they are underrepresented, with special consideration given to an intersectional approach. The UdK Berlin explicitly encourages qualified individuals with a migration background, Black people, and/or People of Color to apply. Applicants with a recognized severe disability will be given preference if equally qualified. Please indicate any severe disability in your application.

By submitting your application, you consent to your data being processed and stored electronically.

More information at <https://stellenticket.de/204250/TUB/>

Offer visible until 02/06/26

