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.

Research internship and/or thesis in the field of Computer Vision and Building Energy

The Universität der Künste Berlin, VPT department, invites you to contribute to the FACaiDE (AI-supported analysis of energy efficiency of facades) project ([link](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 develops a workflow for extracting energy-relevant building façade parameters from video
data and integrating them into BIM-based 3D building models. Using video sequences captured at
street level or by mobile devices, relevant façade images are automatically selected, processed, and
analyzed using AI-based computer vision models.

Derived parameters—such as window areas, number of floors, façade typology, and opening ratios—
are then used to enrich simplified building models (e.g. LOD2) into more detailed digital twins suitable
for urban-scale energy simulation and analysis.

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.
- Experience with Computer Vision methods and/or Image Processing.
- Basic knowledge of energy efficiency metrics 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 "FACaiDE02 Student Position", along with the usual documents addressed to Prof. Dr. Christoph Nytsch-Geusen via email (in a single PDF document) to nytsch@udk-berlin.de and k.mathur@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/204248/TUB/
Offer visible until 18/06/26