

For a project on **damage detection** using **artificial intelligence**, we are looking to fill a

PhD Position

that is **fully funded** (100%) with remuneration according to **TV-L (E13)**

Keywords • Structural Health Monitoring, Artificial Intelligence, Damage Detection, Ultrasonic Technology

About the project • The economic performance and stability of modern society depend on the reliability and durability of reinforced concrete structures, a fundamental component of our built world. Therefore, maintenance of infrastructure remains one of the primary core tasks of infrastructure management. If damage at an early stage is detected and precautionary measures are applied, maintenance costs can be significantly reduced, and lives can be saved by preempting failure. To this end, we are currently developing a cutting-edge ultrasonic wave-based technology for detecting damage in concrete structures. The goal of this project is to use methods of artificial intelligence (AI) to extract valuable information from diffuse ultrasonic waves to detect early-stage damage in concrete.

Tasks and responsibilities

- Execution of the research project
- Preparation of scientific (English) publications and (German) reports
- Supervision of students (seminar, bachelor, master theses) and support in teaching
- Presentation of project results at meetings, conferences, and workshops

Your profile and competencies

- University degree (Dipl.-Ing. / M.Sc. / M.Eng) in the field of civil engineering, building materials/materials engineering, or computational engineering (preferably with a bachelor in civil engineering)
- Very good to good academic performance in the mathematical and scientific subjects
- Ability to work independently and willingness to work in teams and with our project partners.
- Programming experience (e.g., Python)
- Very good knowledge of English and German, both written and spoken

We offer a fully funded PhD position. Employment is with remuneration according to TV-L (E13). The TUM is striving for gender equality, and applications from women are therefore expressly welcomed. Severely disabled persons will be given preference in the case of equal suitability. For further information and impressions on the topic related to the research project, visit www.mae.ed.tum.de/coda.

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School of Engineering and Design
Department of Materials Engineering
cbm – Centre for Building Materials
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Interested?

We look forward to receiving your application.
Please send your documents exclusively via e-mail
with the subject '**coda-ai**' until **31.12. 2023** to:
jithender.timothy@tum.de

*Opportunities
for Talents*