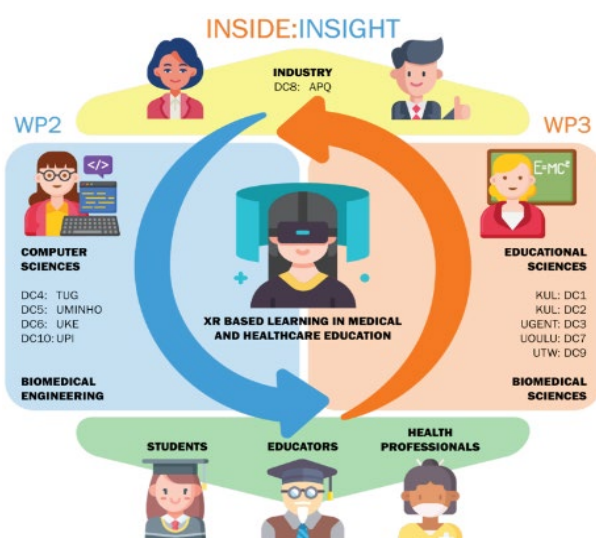


**INSIDE:INSIGHT Call for application for 1 Doctoral (PhD) Training Position in
“SurgilearnX: Revolutionizing surgical training with XR-enhanced MOOC platform”.**

Offer Description

INSIDE:INSIGHT is a Doctoral Network funded by the Horizon Europe programme of the EU. It is composed of 12 partners across Europe, Canada and New-Zealand and includes leading scientists from academia and industry. Within the consortium there is expertise in educational theories and technologies, human anatomy, computer vision and sciences, biomedical engineering, medical imaging and surgery. Through its research and training activities, the INSIDE:INSIGHT project will contribute to scientific advancement and innovation in Europe, ultimately leading to societal and economic benefits.



The graduates of **INSIDE:INSIGHT** will be well-prepared for a career in as well as outside academia with an innovative and beyond state-of-the-art view on different aspects of educational technologies. Moreover, the students will be trained in transferable skills, such as communication, entrepreneurship, intellectual property rights and ethics. Participating in INSIDE:INSIGHT offers many unique opportunities, including:

- The undertaking of a project as a Marie Skłodowska-Curie trainee at one of the partner institutions, with the goal of earning a doctoral degree (PhD).
- State-of-the art, exciting research in an international consortium with highly integrated projects.
- Expert training in basic and applied research, along with a thorough understanding of entrepreneurship and valorisation.
- A research training period in another consortium member's lab lasting from a few weeks up to three months, performed in a different country.
- Gross Salary according to [EU guidelines](#) for Marie Skłodowska Curie trainees, including mobility payments and family allowances where applicable.



Hosting Institution

[apoQlar](#) GmbH, located in Hamburg, Germany, is the developer of a medical mixed reality platform that is revolutionizing how medicine is practiced, experienced, learned, and shared. HoloMedicine® is a software platform that leverages to transform medical images, clinical workflows, and medical education into an interactive 3D mixed reality environment.

apoQlar GmbH is looking for a **full-time (100%) doctoral scholarship holder** in the development and assessment of **XR technologies in (bio)medical education** within the context of the recently approved Marie Skłodowska-Curie Action Doctoral Network (MSCA-DN) **INSIDE:INSIGHT Project**. You will **work hand in hand with apoqlar's R&D Team to support the subject SurgiLearnX: Revolutionizing surgical training with XR-enhanced MOOC platform**.

Application and Selection process

The selection procedure will be open, transparent and merit-based, fully aligned with the Code of Conduct for the Recruitment of Researchers. Although the selection will be based on the quality of applications, gender balance will also be considered. **Applications (in English)** must include:

1. A **motivation letter**, emphasizing the candidate's strength regarding the project requirements.
2. A **complete CV**.
3. A **1-page summary of your Master thesis**.
4. A **transcript** of your study **results** with scanned copy of your **Bachelor's and Master's Degree** certificates.
5. **Two reference letters** or the names and contact details of two Referees (former Supervisors/PIs).

Application documents in a single pdf file (< 3 MB) should be sent through the recruitment email address provided. The subject line of the email must be in the following format: ***"INSIDE:INSIGHT application for Project_DC8"***.

Application deadline 22nd October 2025

Applicants are advised to familiarise themselves thoroughly with the INSIDE:INSIGHT project for which they apply and be ready to answer questions on the chosen topic.

The INSIDE INSIGHT Consortium evaluation committee reviews all applications as soon as possible after the application deadline. As soon as a decision is made, we will notify you. If you are still eligible after the pre-selection, you will be informed about the possible next step(s) in the selection procedure, including online interviews (exact date will be discussed upon availability). **Expected start date is 1st November 2025 (at latest 1st January 2026).**

For questions about the profile and the description of duties, please contact Dr. Daniela Salzmann (Daniela.salzmann@apoqlar.com)

Research projects offered by INSIDE:INSIGHT

DC	Project Title	Primary Supervisor Contact	Institution	EU State
1	Investigating the educator's role in virtual learning environments for anatomical and clinical skills training	Prof. Dr F. Depaepe CLOSED	Katholieke Universiteit Leuven (KUL)	BE



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2	Acceptance of technology-enhanced learning materials in medical and healthcare education	Prof. Dr. E. Vereecke CLOSED	Katholieke Universiteit Leuven (KUL)	BE
3	Instructional design and effectiveness evaluation of XR applications in anatomical education	Prof. Dr. Wouter Willaert CLOSED	Universiteit Gent (UGENT)	BE
4	Authoring tools for medical and healthcare education applications in XR	Assoc. Prof. Dr. D. Kalkofen CLOSED	Graz University of Technology (TUG)	AT
5	Gamification of teaching in medical and healthcare education with AI and serious games	Prof Dr. V. Alves CLOSED	University of Minho (UMINHO)	PT
6	Integration and testing of uni- and multimodal XR learning scenarios with real-world medical data.	Prof. Dr. J. Egger CLOSED	University Hospital Essen (UKE)	DE
7	Fostering interprofessional healthcare collaboration: an XR-enhanced pedagogical model for developing SRL/SSRL skill.	Prof. Dr. S. Järvelä CLOSED	University of Oulu (UOULU)	FI
8	SurgiLearnX: Revolutionizing surgical training with XR-enhanced MOOC platform.	Dr. D. Salzmann daniela.salzmann@apoqlar.com Prof. Dr. J. Egger jan.egger@uni-due.de Recruitment contact hr@apoqlar.com DEADLINE 22nd October 2025	Apoqlar (APQ) University Hospital Essen (UKE)	DE
9	Revolutionizing healthcare training: innovative performance monitoring to support error-recovery in simulation-based psychomotor skills training	Dr. M. Groenier CLOSED	University of Twente (UTW)	NL
10	Mixed Reality with both visual perception and manual interaction to understand and learn complex assembled structures for anatomy learning and clinical tasks training.	Prof. Dr. V. Ferrari CLOSED	University of Pisa (UPI)	IT



Detailed Project Description

DC8	SurgiLearnX: Revolutionizing surgical training with XR-enhanced MOOC platform
Host Institution	APOQLAR (APQ)
Doctoral School	University Hospital Essen
Primary Supervisor	Dr Daniela Salzmann
Secondary Supervisors	Prof. Dr. Jan Egger
Email for applications	hr@apoqlar.com
Applications Deadline	22nd October 2025
Planned duration	36 months
Subject Area	XR-enhanced MOOC Platform development
Introduction: Our objective is to define and develop a scalable surgical learning MOOC platform that adheres to eLearning design principles and meets the diverse needs of healthcare professionals as well as critical ethical considerations related to XR, AI, visualizations, and data protection. This includes creating structured XR teaching modules that leverage 3D medical objects, digital twins, and interactive case studies, while also evaluating the effectiveness of XR environments compared to conventional training methods. As a key contributor, you will gain hands-on experience in a Software-as-a-Service (SaaS) lifecycle, work collaboratively across disciplines, and explore market access strategies for XR technologies in healthcare education.	
Objectives: <u>Science objectives:</u> 1) To define the requirements of an open scalable surgical learning MOOC platform in XR for health professionals based on eLearning design principles and the specific needs of the healthcare workers (e.g., adaptability to diverse student and instructor profiles, platform compatibility, collaboration, certification including legal and professional regulations compatibility, user management, scalable deployment, sustainable business model). 2) To develop a structured XR teaching module creation (for instructors) and consumption (for trainees) workflow to accommodate specific needs of surgical training (e.g., 3D medical objects, digital twins, case studies, animations, exercises, consultation). 3) To develop a study design to evaluate the effectiveness of medical and healthcare self-learning XR environments over conventional on-site trainings on training time, learning outcomes, retention of knowledge. <u>Training objectives:</u> 1) Software-as-a-Service lifecycle (SaaS): Provide DCs with hands-on SaaS product experience, from ideation to market entry. 2) XR technology: Build proficiency in the development and design of XR applications that seamlessly work across multiple platforms and online services along with massive user and data management. 3) Interdisciplinary collaboration: Get familiar working effectively with experts from various fields to find solutions to complex problems. 4) Market access: Learn about research valorisation techniques and strategies for product marketing in the healthcare and XR technology sector.	
Expected Results: The project anticipates the creation of a highly adaptable and scalable XR surgical learning platform catering to health professionals, promoting efficient training and skill development. It envisions the development of specialized surgical teaching modules enriched with immersive technologies and evaluations of their effectiveness in enhancing learning outcomes. Through interdisciplinary collaboration and market access strategies, the project aims to pave the way for innovative XR solutions in healthcare education and broaden access to these valuable training resources.	
Secondments: (1) 3 months at University of Twente (M10-12) to gain insight on MOOC development, online learning and simulation training. (2) 3 months at Graz University of Technology (M19-21) to enhance software skills for cross	



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compatible XR platform and framework development. **(3)** 4 months at University of Ghent (M30-33) to conduct user tests for self-regulated learning techniques and refinement of the proposed solution.

Project-specific selection criteria: Candidates should have a Master's degree or similar education level in biomedical engineering, technical medicine, computer science or a related discipline, with a strong interest or proven experience in XR technologies (VR, AR, MR) and their application in education or healthcare. The following expertise will be highly evaluated and appreciated:

- Programming experience, particularly in C#, Unity, or Unreal Engine, with a background in developing XR applications.
- Experience in user experience (UX) design, conducting user tests, and refining user interfaces based on feedback is essential, along with a good command of both qualitative and quantitative research methodologies.
- Familiarity with the infrastructure for hosting MOOC applications—particularly cloud services, databases such as SQL and NoSQL, and user authentication systems—is highly desirable.
- Experience with web development frameworks such as React or Node.js, or backend infrastructure like AWS or Azure, would be advantageous.

Strong research interests and analytical skills, with the ability to conduct rigorous academic work..

Recommended reading:

- **Remote proctorship program IHPBA** https://www.linkedin.com/posts/yujiagao-7a2117210_mixedrealityholomedicine-hololens2-activity-6993753622803091458-GjL9?utm_source=share&utm_medium=member_desktop 3)
- **Use of the mixed reality tool "VSI Patient Education" for more comprehensible and imaginable patient educations before epilepsy surgery and stereotactic implantation of DBS or stereo-EEG electrodes.** House, P.M., Pelzl, S., Furrer, S., Lanz, M., Simova, O., Voges, B., Stodieck, S.R.G., Brückner, K.E. Epilepsy Res. 2020 Jan;159:106247. Epub 2019 Nov 26. PMID: 31794952.
- **Systems, Methods and Apparatus for Calculating Position and Rotation from a Manually set Reference Point in a Spatial Mesh.** Patent no: US2022392163A1 (05/2023)
- **Image Registration with Semantic Segmentation Mask. Ensure results for 3D Visualisation.** Patent no: 19196193.7 (09/2019)

