



We are looking to support our rapidly growing team as soon as possible:

Solution Architect (f/m/x) in Medical Data Integration Center (with option a PhD)

Institute for Biomedical Informatics



TV-L: 38,5 h/week (100%)



limited for 24 months
according to WissZeitVG
Third-party funded project



Your salary will be based on
TV-L

Your tasks

- Design, evaluate, and scientifically analyze end-to-end solution architectures for medical data integration platforms, generating insights into their performance, scalability, and interoperability in medical domain
- Investigate and optimize development and deployment processes, including automation, CI/CD pipelines, and DevOps practices, to systematically study efficiency improvements and reproducibility in clinical IT workflows
- Conduct interdisciplinary research in collaboration with software developers, data engineers, data stewards, clinicians, and researchers, analyzing domain-specific requirements and translating them into innovative IT solutions
- Define, evaluate, and advance best practices for software architecture, data flows, and system design, systematically assessing their effectiveness in clinical environment
- Research, evaluate, and integrate emerging technologies for data ingestion, transformation, storage, and access (e.g., FHIR, HL7, DICOM), studying their applicability, efficiency, and interoperability in medical research contexts
- Investigate system reliability, scalability, and regulatory compliance, including GDPR and ISO frameworks, and develop scientifically grounded

Your future with us

We are one of the leading university hospitals in Germany and network research, teaching and health care at the highest level. That's why many things are a lot bigger for us: the spectrum of exciting development opportunities. The limitless openness with which specialists from all over the world work together here. Or our commitment as an employer to support all employees as best we can in reconciling their job with their goals and life situations.

This is the University Hospital of Cologne: Everything but ordinary.

Your future in detail

The [Institute for Biomedical Informatics \(BI-K\)](#), in collaboration with the [Medical Data Integration Center \(MeDIC\)](#), provides an excellent setting to develop and apply a data-driven medicine agenda. In this position, you will gain experience as part of a medical care setting and apply novel ideas in an agile and innovative environment.

You will:

- Be involved in innovative, interdisciplinary research projects addressing key challenges in the biomedical field

- guidelines for secure medical research data management
- Lead methodologically structured technical reviews and mentor team members, promoting research-based solution design and deployment strategies
- Create and maintain scientific documentation, standards, and guidelines to ensure reproducibility, traceability, and the dissemination of IT software solutions
- Publish research findings in international scientific journals and present results at scientific conferences, contributing to the global body of knowledge in medical informatics

- Have the opportunity to work closely with outstanding experts in medicine and computer science, utilising medical data in a realworld health setting
- Collaborate with clinics to develop and implement strategies that enhance data-driven decision-making in their daily practice and research

We support further career development and provide personalised mentoring.

Your profile

- Master's degree in Computer Science, Engineering, Information Systems, or related field.
- Proven minimum of three years of experience as a Solution Architect, preferably in healthcare, data integration, or cloud environments
- Understanding of interoperability standards (FHIR, HL7, DICOM) and data governance principles is preferable
- Hands-on experience with DevOps tools (GitLab CI/CD, Docker, etc.)
- Solid experience with distributed systems, APIs, databases, and microservices
- Strong programming skills in at least one programming language (e.g., Python, Java, or C#) and experience with microservices, API-based system design, and eventdriven architectures
- Skilled in ETL/ELT frameworks and orchestration tools, data modelling and harmonisation, and experienced with relational and analytical database technologies
- Understanding of containerization technologies
- Good knowledge of monitoring and logging tools such as Prometheus, Grafana, and the ELK stack
- Experience with Linux-based systems administration
- Expertise in designing secure, scalable, and modular architectures
- Excellent communication and documentation skills, with the ability to bridge the gap between technical and nontechnical stakeholders
- Ability to translate business requirements into technical terms and communicate complex technical contexts in an understandable way
- Enjoying agile collaboration in cross-functional teams and having a team player mentality

Our offer

- Opportunity to make a tangible impact on healthcare data innovation
- Excellent technical infrastructure and clinical

collaborations to work with real-world healthcare data

- Collaborative, interdisciplinary work environment
- Flexible working hours and hybrid options
- Professional growth and training opportunities
- Support in progressing your academic career or in innovation activities, such as start-ups
- Our institute promotes diversity and offers a family friendly and modern working environment

Applications from female candidates are expressly welcome and will be given priority in the event of equal suitability, competence and professional performance. People with disabilities are welcome to apply and will be treated preferentially in the event of equal suitability and qualification. The position is suitable for staffing with part-time employees.

Contact

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Application deadline: 08.03.2026

Job-ID: 6vyfpb82

Universitätsklinikum Köln AöR
Geschäftsbereich Personal
Kerpener Str. 62
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[Uniklinik Köln Karriere](#)

apply now

We look forward to receiving your application and getting to know you!