

Junior Project Manager

Job Location

Cheshire, UK (Head Office)

Area / Department

Project Management

Contract Type

Permanent

Salary

GBP 45,000 - 50,000 depending on experience, with excellent benefits

Closing Date

02/04/2024

Ref No

10288

At the SKAO we are coordinating a global effort to deliver one of the largest science facilities on the planet. The SKAO telescopes will be next-generation instruments that will help to answer key questions in astrophysics, drive technological innovation and support human capital development.

More than a dozen partner countries and over a thousand scientists and engineers around the world are already on board, making the SKA project an international collaboration like no other, and one of the most ambitious science and engineering endeavours of the 21st century.

Headquartered in the UK, with telescope sites in Australia and South Africa, the SKAO will be one observatory operating two telescopes, an endeavour spanning three continents. Multinational by design, in early 2021 the SKAO became an intergovernmental organisation, one of only a select handful of science infrastructures to do so worldwide.

Our Global HQ is located near the buzzing city of Manchester at the historic Jodrell Bank Observatory, a UNESCO World Heritage site located in the Cheshire countryside. It is home to a rapidly expanding international team of more than a hundred, working in a highly collaborative and inclusive way, in coordination with SKAO teams in Australia and South Africa as part of a global astronomy and engineering community.

Being part of Team SKA means contributing to something extraordinary: a uniquely exciting project to advance human knowledge that will last for decades. In return, we offer a diverse multicultural working environment, 30 days annual leave plus public

holidays, a generous pension scheme, visa and support with relocation (if applicable), regular social events, a family-friendly environment and much more. Come and join us!

A unique opportunity for a junior project professional who can inspire and coordinate teams working on different continents in order to deliver one of the biggest scientific facilities on the planet.

The Role

The Junior Project Manager will contribute to the delivery of important systems for the SKA-Mid Telescope being built in South Africa. They will be responsible for preparing and then managing some of the SKA-Mid construction workpackages. The workpackages will include, for example, specialist timing distribution equipment and enterprise computing and networking solutions.

The Junior Project Manager will report to the Senior Project Manager SKA-Mid and will work with an experienced team of project managers and scientists to deploy systems using state of the art technology. The Junior Project Manager will also lead matrixed internal staff and contractors to deliver these contracts to scope, schedule and budget, reporting on progress, identifying risks and communicating with key stakeholders.

This role will be based at the SKAO Global Headquarters at the iconic Jodrell Bank Observatory, Cheshire, UK, and occasional international travel will be required to contractors and the construction site in the Karoo in South Africa.

SKAO is committed to providing an inclusive and flexible working environment, meeting the requests of our Colleagues whilst also fulfilling the needs and objectives of the Observatory.

We encourage applications from under-represented groups such as women and individuals with disabilities, as well as open conversations during the recruitment process in relation to any specific requirements.

There may be occasions where this role requires the post holder to work across different time zones and, in line with SKAO policy, flexible working hours will be supported in agreement with the line manager.

Key Responsibilities, Accountabilities and Duties

- Manage engineering and construction contracts to deliver essential sub-systems to the Observatory.

- Support the Project Managers SKA-Mid Digitisation and SKA Networks in the preparation of complex contracts for the SKA-Mid Telescope.
- Support the leadership and development of the Mid Digital and Networks product delivery teams.
- Support project quality reviews in order to identify, assess and take action to mitigate risks to project success.
- Liaise with stakeholders, internally and externally, in order to resolve queries, using specialised knowledge to guide decision making.
- Ensure project controls are implemented for contracts under their management such that they are delivered to the expected cost, time and quality.
- Travel internationally as required, to contractors and the construction site in South Africa (typically three times per year for 1-2 weeks to South Africa, and occasionally within Europe).

Mandatory Knowledge, Skills and Experience

- University degree in engineering or physical sciences.
- Relevant Project Management qualification, or good understanding of project management methodologies and willingness to achieve certification.
- Experience contributing to the successful delivery of engineering-based programmes/projects (typically at least two years) which may have been gained in a project support role.
- Knowledge of contract management and procurement procedures.
- Basic understanding of networking and digital signal processing technologies, with considerable on the job training provided.
- Good analytical and problem-solving skills, with the ability to gather data and use this to inform understanding.
- Good oral and written communication skills in English.
- Be a flexible and self-motivated team player who is adaptable to change.
- Ability and willingness to travel nationally and internationally as required.

Desirable Knowledge, Skills and Experience

- Membership of recognised national or international project management institution.
- Experience or knowledge of agile delivery methods.
- Experience or knowledge of NEC contracting or other types of contracts.
- Experience of working with international teams, either geographically dispersed or in different time zones.
- Experience working in large, international scientific projects.

Equality Diversity and Inclusion Statement

SKA Observatory recognises that our diversity is a strength. We aim to create a welcoming and inclusive environment where everyone feels they belong, and diverse perspectives and ideas thrive. As such, Equality, Diversity, and Inclusion are at the core of SKA Observatory's agenda.

Our aim is to recruit and retain the most talented individuals, regardless of gender, race, disability, age, sexual orientation, marital status, religion, nationality or background.

Women have traditionally been under-represented in the fields of science and engineering; SKA Observatory welcomes and encourages female applicants.

Where applicants with a disability need facilities or adjustments to enable them to participate in the recruitment process, these will be provided.

SKA Observatory welcome all candidates, especially those from member countries.

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Software Quality Engineer

Job Location

Cheshire, UK (Head Office)

Area / Department

Software Data Management and IT

Contract Type

Fixed Term Contract

Salary

GBP 60,000 - 65,000 depending on experience, with excellent benefits

Closing Date

08/04/2024

Ref No

10276

At the SKAO we are coordinating a global effort to deliver one of the largest science facilities on the planet. The SKAO telescopes will be next-generation instruments that will help to answer key questions in astrophysics, drive technological innovation and support human capital development.

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Our Global HQ is located near the buzzing city of Manchester at the historic Jodrell Bank Observatory, a UNESCO World Heritage site located in the Cheshire countryside. It is home to a rapidly expanding international team of more than a hundred, working in a highly collaborative and inclusive way, in coordination with SKAO teams in Australia and South Africa as part of a global astronomy and engineering community.

Being part of Team SKA means contributing to something extraordinary: a uniquely exciting project to advance human knowledge that will last for decades. In return, we offer a diverse multicultural working environment, 30 days annual leave plus public holidays, a generous pension scheme, visa and support with relocation (if applicable), regular social events, a family-friendly environment and much more. Come and join us!

An amazing opportunity for a talented Software Engineer with strong understanding of DevOps practices and principles to join an international, multicultural organisation.

The Role

The SRC Network is a distributed effort to set up the global network of regional centres that will enable the scientific community to publish and process data obtained from using the SKA telescopes. The SRC Network will be realised by active collaboration between many institutions, globally distributed and coordinated by SKAO.

Enabling flow and quality practices in delivering working software to the SKA science regional centres is our challenge. A strong understanding of DevOps practices and principles will be essential in identifying, communicating and implementing the strategies to be adopted in our environment. The Software Quality Engineer will work, alongside others, to establish the Continuous Delivery pipeline supporting a software system that will have to last, and be continually developed, for decades.

The outcomes of your work will also feed directly into the SKAO contribution to the EU-funded EVERSE project, that aims to create a framework for research software and code excellence, collaboratively designed and championed by the research communities across five EOSC Science Clusters and national Research Software Expertise Centres, in

pursuit of building an European network of Research Software Quality and setting the foundations of a future Virtual Institute for Research Software Excellence. In particular, your area of focus will be the development of a technology watch for tools and services to assess, curate and improve scientific software, code and workflows quality in the Science Clusters.

At SKAO we support staff in their continuous professional development and this role presents the opportunity for training in the scientific and technical aspects of the role and to work closely with more experienced software engineers, as well as the opportunity to occasionally attend relevant international conferences and industry events.

This role is known internally as SRC Software Quality Engineer and will report to the SKAO Regional Centres Architect.

This role is a 3-year fixed term appointment based at the SKAO Global Headquarters at the iconic Jodrell Bank Observatory, Cheshire, UK, and occasional international travel may be required to the EVERSE EU project events.

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We encourage applications from under-represented groups such as women and individuals with disabilities, as well as open conversations during the recruitment process in relation to any specific requirements.

There may be occasions where this role requires the post holder to work across different time zones and, in line with SKAO policy, flexible working hours will be supported in agreement with the line manager.

Key Responsibilities, Accountabilities and Duties

- Work in collaboration with the SRCNet Software team to define and implement the Continuous Delivery pipeline for the SRCNet software systems.
- Work with the SAFe® system team to support and help agile development teams in adopting DevOps practices as defined.
- Support the integration and delivery of high-quality software products by providing feedback and guidelines to developers about the quality practices adopted in the SRCNet collaboration.
- Support the development and design of test plans, scenarios, scripts and procedures.
- Participate in the activity of the EVERSE EU project, representing SKAO as required and in coordination with the SKAO participation led by the SKAO Lead Software Architect.

- Occasionally travel internationally as required (typically for up to one week, 2-3 times per year).
- Undertake any other reasonable duties as directed by the line manager and senior management.

Mandatory Knowledge, Skills and Experience

Candidates are encouraged to provide links to openly accessible software repositories and documentation where applicable.

- Experience in managing software projects according to modern software engineering practices, including using distributed version control systems, adopting DevOps principles, and infrastructure as code.
- Understanding of best practices related to software quality, including test automation and continuous integration, and how they fit in an agile development environment.
- Experience in provisioning software infrastructures using automated tools (Docker, Ansible, Terraform), setting up and utilising cloud and virtualization platforms (AWS, OpenStack, GCP) and application hosting technologies (Kubernetes, Mesos, OpenShift).
- Collaborative approach and ability to work effectively to meet competing deadlines.
- Be a flexible team player who is adaptable to change.

Desirable Knowledge, Skills and Experience

- Experience in developing software within a scientific collaboration.
- Experience in integrated security practices such as secrets management into the DevOps pipelines.
- Experience working in a multicultural environment across international boundaries and time zones.

Equality Diversity and Inclusion Statement

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Systems Engineer

Job Location

UK or South Africa

Area / Department

Engineering

Contract Type

Fixed Term Contract

Salary

Circa GBP 60,000 or ZAR 850,000 depending on experience and location, with excellent benefits

Closing Date

08/04/2024

Ref No

10292

At the SKAO we are coordinating a global effort to deliver one of the largest science facilities on the planet. The SKAO telescopes will be next-generation instruments that will help to answer key questions in astrophysics, drive technological innovation and support human capital development.

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Being part of Team SKA means contributing to something extraordinary: a uniquely exciting project to advance human knowledge that will last for decades. In return, we offer a diverse multicultural working environment, 30 days annual leave plus public holidays, a generous pension scheme, visa and support with relocation (if applicable), regular social events, a family-friendly environment and much more. Come and join us!

An exciting opportunity for a Systems Engineer with experience in large multi-disciplinary projects to join an international, multicultural organisation to build a world class science infrastructure project.

The Role

The Systems Engineer will support the SKA-Mid Telescope Systems Engineer with systems engineering activities and deliverables at the overall telescope level in South Africa.

Because construction is underway, a big part of the role will be supporting verification and integration of the delivered products. Therefore, in addition to having a strong grasp of systems engineering processes (such as requirements, interfaces, and configuration management), the Systems Engineer will also have experience in the procurement, construction and verification stages of a project.

This role is known internally as SKA-Mid Systems Engineer and will report to the Head of Systems Engineering as part of an 8-person team spanning multiple countries.

This role is a 3-year fixed term appointment with the possibility of extension according to business needs.

The role will be based either in Cape Town, South Africa, or in Cheshire, UK, and will require occasional national and international travel to SKAO sites and suppliers (typically for up to one week, 2-3 times per year).

SKAO is committed to providing an inclusive and flexible working environment, meeting the requests of our Colleagues whilst also fulfilling the needs and objectives of the Observatory.

We encourage applications from under-represented groups such as women and individuals with disabilities, as well as open conversations during the recruitment process in relation to any specific requirements.

There may be occasions where this role requires the post holder to work across different time zones and, in line with SKAO policy, flexible working hours will be supported in agreement with the line manager.

Key Responsibilities, Accountabilities and Duties

Support the SKA-Mid Telescope Systems Engineer to:

- Lead the systems engineering activities for the SKA-Mid Telescope by maintaining system requirements and their traceability; managing design compliance issues; establishing and maintaining a systems model; maintaining Interface Control Documents, and maintaining the Product Breakdown Structure.
- Provide leadership as the technical architect for the SKA-Mid Agile Release Train, by coordinating the planning of goals and ensuring teams are aligned to deliver those goals.
- Manage technical issues, Engineering Change Proposals, problem reporting, etc.
- Support the Assembly, Integration and Verification (AIV) team, in defining and managing Test Cases, Test Plans and Test Reports; and ensuring test coverage is complete.
- Coordinate and guide the Product Delivery Teams to meet their systems engineering deliverables.
- Travel nationally and internationally as required to SKAO sites and suppliers (typically for up to one week, 2-3 times per year).
- Undertake any other reasonable duties as directed by the line manager or senior management.

Mandatory Knowledge, Skills and Experience

Technical competencies:

- University degree in Engineering, Telecommunications or Physics, or equivalent experience.
- Substantial experience working as a systems engineer in complex, large-scale, technology systems.
- Experience working as a systems engineer during the procurement, construction and verification stages of a project.
- Ability to deliver and lead on the delivery of joined up solutions across a range of stakeholders and customers.

Behavioural competencies:

- Big picture thinker with a hands-on approach.
- Solution oriented with the ability to apply both logic and creativity to arising issues.
- Good organisational, time management and prioritising skills.
- Ability to build good working relationships with internal and external stakeholders.
- Good communication skills with the ability to present to international and other forums.
- Open minded and empathetic individual.
- Flexible team player who is adaptable to change.

Desirable Knowledge, Skills and Experience

- Recognised Systems Engineering certification.
- Experience in using Requirements Management tools (e.g. Jama).
- Experience in using MBSE tools (e.g. Cameo Enterprise Architecture).
- Knowledge of systems engineering of software systems and agile software development.
- Experience or ability to lead a functional or a cross-functional team.
- Knowledge of project management processes and tools.
- Ability and willingness to occasionally travel nationally and internationally as required.

Equality Diversity and Inclusion Statement

SKA Observatory recognises that our diversity is a strength. We aim to create a welcoming and inclusive environment where everyone feels they belong, and diverse perspectives and ideas thrive. As such, Equality, Diversity, and Inclusion are at the core of SKA Observatory's agenda.

Our aim is to recruit and retain the most talented individuals, regardless of gender, race, disability, age, sexual orientation, marital status, religion, nationality or background.

Women have traditionally been under-represented in the fields of science and engineering; SKA Observatory welcomes and encourages female applicants.

Where applicants with a disability need facilities or adjustments to enable them to participate in the recruitment process, these will be provided.

SKA Observatory welcome all candidates, especially those from member countries.

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Systems Engineer

Job Location

Perth, Australia

Area / Department

Engineering

Contract Type

Fixed Term Contract

Salary

Circa AUD 145,000 depending on experience, with excellent benefits

Closing Date

09/04/2024

Ref No

10291

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Headquartered in the UK, with telescope sites in Australia and South Africa, the SKAO will be one observatory operating two telescopes, an endeavour spanning three continents. Multinational by design, in early 2021 the SKAO became an intergovernmental organisation, one of only a select handful of science infrastructures to do so worldwide.

Construction activities for the SKAO's telescopes in Australia and South Africa started in 2021, along with a ramping up of SKAO staff in both countries. It is expected that the transition from the Construction Phase to the Operations Phase will happen around 2028.

SKAO Operations in South Africa will be conducted in partnership with the South African Radio Astronomy Observatory (SARAO). SKAO Operations in Australia will be conducted in partnership with the Commonwealth Scientific and Industrial Research Organisation (CSIRO). The Observatory will also partner closely with a global network of SKA Regional

Centres through which astronomers will access science data products and a suite of tools and resources to further analyse the SKA telescopes' data.

For more information on the SKA project visit <https://www.skao.int/>

The SKA Observatory offers a competitive salary and a generous pension and benefits package. As an employee of an intergovernmental organisation, an appointee who is not a national of the country in which the role is based may be subject to personal Privileges and Immunities.

An exciting opportunity for a Systems Engineer with experience in large multi-disciplinary projects to join an international, multicultural organisation and contribute to the construction of the largest radio telescope arrays in the world.

The Role

The Systems Engineer will support the SKA-Low Telescope Systems Engineer with systems engineering activities and deliverables at the overall telescope level, and be accountable for all systems engineering activities and deliverables for the SKA-Low Infrastructure product. This product covers infrastructure such as fibre, power distribution, processing facilities, and site monitoring equipment.

Because construction is underway, a big part of the role will be supporting verification and integration of the delivered products. Therefore, in addition to having a strong grasp of systems engineering processes (such as requirements, interface, and configuration management), the Systems Engineer will have experience in the procurement, construction, and verification stages of a project. Ideally they will also have experience working with infrastructure deliverables.

This role is known internally as SKA-Low Systems Engineer and will report to the Head of Systems Engineering as part of an 8-person team spanning multiple countries.

This role is a 4-year fixed term appointment with the possibility of extension according to business needs.

The role will be based in Perth, Australia, and will require occasional national and international travel to SKAO sites and suppliers (typically for up to one week, 2-3 times per year).

SKAO is committed to providing an inclusive and flexible working environment, meeting the requests of our Colleagues whilst also fulfilling the needs and objectives of the Observatory.

We encourage applications from under-represented groups such as women and individuals with disabilities, as well as open conversations during the recruitment process in relation to any specific requirements.

There may be occasions where this role requires the post holder to work across different time zones and, in line with SKAO policy, flexible working hours will be supported in agreement with the line manager.

Key Responsibilities, Accountabilities and Duties

- Be the SKAO Design Authority for the SKA-Low Infrastructure product. This means being responsible for ensuring the delivered solution meets goals, needs and specifications.
- Maintain the Interface Control Documents (ICDs) and the requirements tree for SKA-Low Infrastructure and its sub-products, where necessary liaising with stakeholders to resolve unknowns and reduce uncertainty.
- Ensure alignment between the SKAO's and the contractors' Product Breakdown Structures.
- Drive and coordinate Engineering Change Proposals.
- Drive any cross-disciplinary conversations (e.g. between the contractors and SKAO teams) that are needed to resolve issues that arise.
- Respond to Technical Queries submitted by contractors.
- Verify that submitted deliverables satisfy requirements, ICDs, and applicable standards, especially at formal review gates.
- Ensure that verification activities are aligned with SKAO processes and schedule.
- Participate in Factory Acceptance Tests, Site Acceptance Tests, and integration events where needed.

Additionally, support the SKA-Low Telescope Systems Engineer to:

- Lead the systems engineering activities for the SKA-Low Telescope by maintaining system requirements and their traceability; managing design compliance issues; establishing and maintaining a systems model; maintaining Interface Control Documents; and maintaining the Product Breakdown Structure.
- Provide leadership as the technical architect for the SKA-Low Agile Release Train, by coordinating the planning of goals and ensuring teams are aligned to deliver those goals.
- Manage technical issues, Engineering Change Proposals, problem reporting, etc.
- Support the Assembly, Integration and Verification (AIV) team, in defining and managing Test Cases, Test Plans and Test Reports; and ensuring test coverage is complete.
- Coordinate and guide the Product Delivery Teams to meet their systems engineering deliverables.
- Travel nationally and internationally as required to SKAO sites and suppliers (typically for up to one week, 2-3 times per year).

- Undertake any other reasonable duties as directed by the line manager or senior management.

Mandatory Knowledge, Skills and Experience

Technical competencies

- University degree in Engineering, Telecommunications or Physics, or equivalent experience.
- Substantial experience working as a systems engineer in complex, large-scale, technology systems.
- Experience working as a systems engineer during the procurement, construction and verification stages of a project.
- Ability to deliver and lead on the delivery of joined up solutions across a range of stakeholders and customers.

Behavioural competencies

- Big picture thinker with a hands on approach.
- Solution oriented with the ability to apply both logic and creativity to arising issues.
- Good organisational, time management and prioritising skills.
- Ability to build good working relationships with internal and external stakeholders.
- Good communication skills with the ability to present to international and other forums.
- Open minded and empathetic individual.
- Flexible team player who is adaptable to change.
- Ability and willingness to occasionally travel nationally and internationally as required.

Desirable Knowledge, Skills and Experience

- Experience working with infrastructure deliverables (e.g. buildings, fibre, power, etc).
- Recognised systems engineering certification.
- Experience in using MBSE tools (e.g. Cameo Enterprise Architecture).
- Experience in using requirements management tools (e.g. Jama).
- Knowledge of systems engineering of software systems and agile software development.
- Experience or ability to lead a function or a cross-functional team.
- Knowledge of project management processes and tools.

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Software Architect

Job Location

Cheshire, UK (Head Office)

Area / Department

Software Data Management and IT

Contract Type

Permanent

Salary

Circa GBP 70,000 depending on experience, with excellent benefits

Closing Date

12/04/2024

Ref No

10287

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An amazing opportunity for an experienced Software Engineer or Architect with a background in web-based systems for management of complex (ideally scientific) business processes and workflows, and a focus on the development of an integrated user experience across a range of applications, to join an international, multicultural organisation.

The Role

The Software Architect will work with other architects and system engineers to ensure the management and control systems for the two telescopes are fit for purpose, providing the architectural quality needed for a system that will have to last, and be continually developed, for decades.

This role is known internally as Observatory Science Operations Software Architect and will report to the SKAO Lead Software Architect, as part of the Computing and Software group.

The Observatory Science Operations (OSO) software system comprises a suite of tools and services that allow end-users (astronomers) to propose, prepare, manage and track their observations using the SKA telescopes, and aids staff to administer and schedule these observations, sharing the telescope resources to maximise scientific productivity.

At SKAO we support staff in their continuous professional development and this role presents the opportunity to attend relevant international conferences and industry events, as well as the opportunity for national and international travel to the telescope sites and collaboration teams.

This role will be based at the SKAO Global Headquarters at the iconic Jodrell Bank Observatory, in Cheshire, UK.

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There may be occasions where this role requires the post holder to work across different time zones and, in line with SKAO policy, flexible working hours will be supported in agreement with the line manager.

Key Responsibilities, Accountabilities and Duties

- Be the technical design authority for the OSO software system, ensuring that its design and implementation is continuously meeting SKA requirements and goals.
- Interact with stakeholders, especially in the domain of Science Operations, and be able to translate their functional and non-functional requirements into the technical domain, with particular attention to the usability of the OSO system.
- Maintain the existing OSO architecture and documentation, and develop it where necessary, adopting an evolutionary approach that follows the agile software development lifecycle.
- Work with the SKA Architecture team using processes based on the Scaled Agile Framework to advise and lead software development teams based around the world.
- Work within the program team of the SKA Observation Monitoring and Control (OMC) Agile Release Train in coordination with the control system architect and the OMC product managers, also joining appropriate Communities of Practice, such as UX and databases.
- Undertake any other reasonable duties as directed by the line manager and senior management.

Mandatory Knowledge, Skills and Experience

- Experience of software engineering applied to the development of intelligent, distributed, web-based business applications, preferably in an agile/iterative environment.
- Technical expertise in the development of scientific management systems for large scientific facilities or a comparable system that can be demonstrated to have similar characteristics.

- Experience with the formalism for, and requirements of, software architecture standards (e.g. UML, ISO/IEC 42010, SEI Views and Beyond).
- Knowledge or understanding of working based on lean/agile principles.
- Ability to bridge between user needs and the architecture and technical solutions, and ability to communicate it in a constructive and effective manner, both orally and in writing, to a wide, diverse audience.
- Good oral and written communications skills in English.
- Be a flexible team player who is adaptable to change and able to work to deadlines.

Desirable Knowledge, Skills and Experience

- Experience in lean/agile principles adopting DevOps and Lean UX practices or be willing to learn them.
- Understanding of database technologies and their place in full-stack development.
- Experience of working in a multicultural environment across international boundaries and time zones.
- Experience of leading or coordinating technical activities for geographically dispersed teams.

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