Job Description（JD）
for Huawei Russia research institute(RRI)

Moscow Research Center （MRC）

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Saint-Petersburg Research Center(SRC)

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Novosibirsk Research Center （NSRC）

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Waiting for your CV!

Nizhny Novgorod Research Center （NNRC）

Email: rrihr@Huawei.com

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Email name: City+ department （eg: Moscow CRI）

HUAWEI

Department: CRI - Central Research Institute

Job Title	Responsibilities	Requirements
Research Engineer 1	1. Conduct cutting-edge research in the field of natural language processing, speech recognition and synthesis, multimodal learning, knowledge graph and deep learning. 2. Develop AI-enabled products and services with other groups in the company 3. Collaborate with world-class organizations in academia	**1. Qualifications preferred:** • possess a PhD degree in computer science, statistics, applied mathematics, or have equivalent research experiences • demonstrate the ability to generate new ideas and innovate • have 3 years of academic or industrial working experiences in natural language processing speech recognition and synthesis, multimodal learning, knowledge graph, deep learning, or related fields • have strong programming skills, experienced in one or more programming languages including but not limited to: C/C++, Java, Python **2. Important skills that will be considered as a plus:** • Well-established research track-record of novel algorithm research, e.g. peer reviewed journal or conference papers in one or more of the following: NIPS, ICML, ACL, EMNLP, ICASSP, INTERSPEECH, or top mathematics conferences
Research Engineer 2	1. Computational performance optimization of AI algorithms for CPU/GPU/NPU 2. Modification and implementation of algorithms on real hardware	**1. Qualifications preferred:** • 5+ years experiences in algorithm development • Embedded software experience • PHD/MS in computer science, computational mathematics, electronic engineering, numerical optimization or a highly related area • Industrial experience in high-performance/distributed/parallel computing • Good mathematical and/or algorithm experience **2. Skills preferred:** • Strong understanding of modern CPU/GPU architectures and trade-offs, program analysis and optimization techniques • Programming skills: C/C++, Java, Python (data structures and algorithms) • Familiar with ARM NEON (or similar); OpenCL/Vulkan/CUDA is a strong plus • Working knowledge of DNN frameworks like (at least one): Tensorflow, PyTorch, etc. • Familiar with state-of-the art models in deep learning: CNN, RNN, Reinforcement learning • Experience with cross-platform development • Experience writing unit and other automation tests

Department: CRI - Central Research Institute

Job Title	Responsibilities	Requirements
Research Engineer 3	1. Algorithm research and development on Graph Neural networks 2. Cooperation in graph neural network area with Universities in Russian	**1、Basic Requirements** Master's degree or above, major in math or applied math or computer **2、Professional Knowledge** • Deep learning • Linear algebra and matrix computations • python and AI framework 3、At least one paper published in Neural Network area, better in Graph Neural Network area
Research Engineer 4	1. Contribute to the network algorithm optimization and network modeling research team to work on the mathematical problems for future network architecture, protocols, and algorithms. 2. Build models for networks and analyze it, with different requirements and conditions. 3. Deduce an 'ideal solution' by simplifying some conditions as a 'limit' how a 'perfect' network could work in theory; 4. Take the constraints in the real world into account, and analyze the best realistic methods on how to approach that 'ideal solution' with distributed mechanisms, to realize optimal goals. 5. Study the network theory limitation with different services or scenarios, such as carrier networks, campus networks, data center networks, etc. 6. With theory research result, support study of new architecture or mechanisms for network, such as addressing, routing, etc. to build better future network.	1. Ph.D degree in Computer Science, Mathematics or Electrical engineering, etc. Have good knowledge of one or more below: Graph theory/Scheduling, queuing theory /Stochastic analysis/ Probability theory/Game theory/Network calculus 2. Have successful experience in a specific field (priority in the network field, other related fields can be used as a reference) with above mathematical theory or method is a plus 3. Good at combining mathematical theories and engineering practice, analyzing problems from root causes, and solving problems using mathematical theories and methods 4. Know the basic theory and development trend of IT technology, such as network or computer architecture, distributed database, Cloud/Edge computing, etc. 5. With experience in network-related research is a plus, including but not limited to network architecture, network protocol, network algorithm, network modeling, AI, etc., 6. Ability to initiate and develop new ideas and initiatives in collaboration with both external and internal partners.

HUAWEI

Department: CRI - Central Research Institute

Job Title	Responsibilities	Requirements
Research Engineer 5	1. Responsible for design Lidar system simulation platform, including various working mechanism, physical and mathematical modeling of all the modules in the system. 2. Responsible for design digital signal processing platform including ranging algorithm, localization algorithm and imaging algorithm, optimize algorithm performance and computation complexity. 3. Responsible to cooperate with academic/industrial partner to work together on one ODSP algorithm field and delivery promising algorithm results.	1. PhD degree, major in Lidar/Radar, Electrical Engineering, signal processing, communication engineering, etc. 2. Having track record of publications or patents on academic journal or conferences. 3. Fluency in spoken and written English. 4. Experienced in physical model of all modules in Lidar/Radar system. 5. Experienced in signal processing algorithms related to ranging, localization and imaging, including but not limited to full-waveform processing, Fourier spectral analysis, coding/decoding, structure light demodulation, computational imaging, back projection imaging, SAR, ultra-resolution algorithm. 6. Familiarity with AI and machine learning is preferred. 7. Familiarity with algorithm implementation, float and fix point evaluation, complexity evaluation and optimization for complexity, latency, power consumption is preferred.
Research Engineer 6	1. Research next generation communication system components, transmission technology. 2. Write the corresponding technical reports and patents, publishing papers	1、Basic Requirements: Master's degree or above; major in radio physics, optics, partial differential equations, optimization theory, or machine learning. 2、Familiar with at least one computer language
Research Engineer 7	1. Conduct fundamental research for Post Shannon Transmission Systems for 6G. 2. Develop theoretical framework and novel transmission systems for the future globally connected things with intelligence. 3. File patents and publish papers in top IEEE/ACM journals and IEEE conferences 4. Develop Simulation Software and Do Simulation 5. Draft Algorithm Specification	1、Basic Requirements PHD degree or above, major in radar, signal processing, communication engineering, math, computer science etc. Familiar with 5G/NR system. With publications on theoretical analysis of Information Theory/Commutation Theory/ signal Processing/Coding theory/ AI/ ML is preferred 2、Professional Knowledge • Statistical and deterministic signal processing theory • Linear algebra and matrix computations • Digital signal processing • Wireless Communication System • Proficient in C/C++/Python language for simulation platform development 3、Additional Requirement • Has strong algorithm design, implementation and optimization capabilities

HUAWEI

Department: CMI – Central Media Technology Institute

Job Title	Responsibilities	Requirements
Media Algorithm Engineer	1. Gain insights into industry-leading technologies and development trends in the media field, take customer application scenarios as assumptions, and focus on mathematics, classic algorithms and AI technologies required by media information flows to make continuous innovations and breakthroughs. 2. Engage in the media field, including researching, innovation, and engineering implementation of image, video, audio, and ARVR algorithms, to achieve Huawei's leading technical competitiveness in the media field. 3. Develop standards in the media codec(video, point cloud, audio, etc.) field and build leadership in standards and industry development. 4. Build ultimate experience for end users based on basic media applications, such as mobile phone photography, video, ARVR, and voice enhancement.	1. Master degree or above in artificial intelligence, computer science, computer photography, optics, electronics, signal and information processing, pattern recognition, biomedical engineering, automation, mathematics, etc. 2. Have theoretical background and R&D experience in image/audio/video/3D data processing, deep learning, object recognition, computer graphics, SLAM, 3D reconstruction, scene recognition, intelligent voice, multimedia information search, optical design, and video protocol standard (HEVC/H264/VPx/VC1/MPEGx). 3. Have solid programming capabilities, and be proficient in programming languages such as C/C++ and Python/Matlab.

Moscow

Department: CHI – Central Hardware Institute

Job Title	Responsibilities	Requirements
Algorithm Researcher	Research and development for: • Computational geometry methods for fast search on 2d layout • Interactive single ended routing • Incremental solving of geometrical overlap • Single ended trace smoothing • Differential pairs smoothing Development and support of C++ standalone libraries Testing and continuous integration,	1、Basic Requirements Master's degree or above in Pure Math or Computer Science 2、Proficient in C++ for algorithm simulation and development, including object oriented programming, STL and templates 3、Has strong solving skills and ability for independent research
Network Algorithm Researcher	Research and development of novel protocols/algorithms for High-Performance Computing (HPC) networks with emphasis on MPI performance and congestion control. - In-depth study and analysis of problem scenarios that arise in HPC network environment. - Development of HPC network simulation model. - Participate in co-operation projects with Academia partners.	1、Basic Requirements Master's degree or above in Pure, Applied Math or Computer Science 2、Proficient in C++ for algorithm simulation and development, including oblect oriented programming, STL and templates 3、Has strong solving skills and ability for independent research

HUAWEI

Department: CSI - Central Software Institute

Job Title	Responsibilities	Requirements
System engineer 1	•Making sure system software stack is fast, efficient, and highly secure. This includes: •Performance and memory size analysis and optimization •Development of advanced features and optimizations in existing and new system software components (system libraries, runtimes, frameworks, kernel, etc.) •Development of other tools enabling software engineering / architectural innovations • Learn all the time. The company encourages attending international conferences and expects employees to stay on the cutting edge of technology.	•Enrolled and working toward BS/MS degree in computer science-related discipline •Strong C / C++ knowledge •Strong knowledge of algorithms and algorithmic complexity theory •Experience of working in Linux environment; advanced knowledge of Unix command-line development tools •Conversationally fluent English. A language certificate is not required, but the ability to pass an interview in English is a must.
System engineer 2	•Making sure system software stack is fast, efficient, and highly secure. This includes: •Performance and memory size analysis and optimization •Development of advanced features and optimizations in existing and new system software components (system libraries, runtimes, frameworks, kernel, etc.) •Development of other tools enabling software engineering / architectural innovations•Learn all the time. The company encourages attending international conferences and expects employees to stay on the cutting edge of technology.	•Enrolled and working toward BS/MS degree in computer science-related discipline •Strong C / C++ knowledge •Strong knowledge of algorithms and algorithmic complexity theory •Experience of working in Linux environment; advanced knowledge of Unix command-line development tools •Conversationally fluent English. A language certificate is not required, but the ability to pass an interview in English is a must.

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Department: Hisilicon

Job Title	Responsibilities	Requirements
Mobile CPU Software engineer	Major Responsibilities The main goal of this position is the research of CPU performance bottlenecks for mobile applications and games and development breakthrough solutions for mobile application accelerations. Your work may include: • Investigation of performance bottlenecks of mobile CPU/SoC for popular apps and games • Design and implementation of compiler optimization passes to eliminate major bottlenecks (performance optimization, power consumption reduction) • Co-design of compiler and CPU architecture/microarchitecture to improve CPU performance • Modeling of hardware to find new performance optimization approaches and work on the requirements for CPU architecture and microarchitecture with design team	**Essential skills and experience:** • Good understanding of computer architecture and micro-architecture • Experience in development compiler and optimizing transformation • Performance analysis and tuning of applications • C/C++, Assembler (read and understands), scripting languages (Python/Ruby) • PhD student or PhD degree defended within last 1 year **Desired skills and experience:** • In-depth knowledge of ARM ISA, system architecture, microarchitecture • Knowledge of Android ecosystem and Linux system design • Experience in HW/SW co-design, ISA and system architecture definition • Basic knowledge of machine learning approaches
AI Senior Research Engineer	Major Responsibilities: • Research in the field of AutoML for On-device Computer Vision • Design, implement, evaluate and deploy models and agents • Promote team competencies & growth • Drive independent research resulting in patents & publications • Present research results to business units	**Qualifications:** • Ph.D. or M.Sc. with 1+ years of industrial exp. in Computer Science, Mathematics with related topics • Strong knowledge and interest of an area of ML/DL for Computer Vision • Strong Background in one of the following topics: General Model Optimization or Compression/Quantization/Pruning/Distillation, AutoML or Reinforcement Learning • Strong software design and implementation skills: Python + DL frameworks • Confident knowledge of optimization methods & algorithms **Desirable additional skills:** • Demonstrated ability to create innovations through publications & patents • Background in the field of AutoML will be a bold plus
Wireless Communication Algorithm Engineer	Responsible for the research of advanced receiver algorithms on user side (5G / 6G cellphones, etc.), break through key technologies, propose high-performance, low-complexity estimation and detection algorithms (traditional or AI methods), and create a modem chipset with the best competitiveness in communication performance in the industry. Specific task includes, but is not limited to: • Research and development of key algorithms for the 5G/6G baseband physical layer of mobile phone chipset, including algorithm research and analysis, protocol and demand analysis, algorithm design and selection, link development and simulation, performance verification and optimization, joint debugging support, troubleshooting and analysis, etc.; • Frontier application research of "AI + Communication", tracking and proposing patents for 3GPP standard.	**Essential skills and experience:** • Ph.D student who graduates in 2019-2022 • Major in Telecommunications, Radio Physics, Digital Signal Processing, Information Transmission, Electrical Engineering, Applied Mathematics, Statistics or equivalent with a special focus on signal transmission, receiving and processing technologies. • Good knowledge in Linear Algebra, Probability Theory and Statistics • Knowledge in Standard data structures and algorithms • Experience in complex systems modeling or simulation • Programming in Matlab/Simulink or C/C++ or others • Good verbal and written communication skills in English

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Department: Cloud BU

Job Title	Responsibilities	Requirements
Research engineer	• Research and development of data compression algorithms	1. Basic requirements New grad or senior year student of one of the top computer science universities. 2. Professional knowledge • Background in mathematics or algorithms. • Competition programming experience is preferred. • Familiarity with common encoding/decoding methods and lossless compression approaches is preferred. • Real-world software engineering work experience is preferred. 3. Additional requirements • Ability to read, understand and write code in C++ and Python. • Ability to speak and understand English – both vocally and in writing.
Researcher 1	• Scheduling algorithms development for IaaS, PaaS • Research and development for cloud modeling • Improving code quality for existing approaches, algorithm optimization • Assist the testing department to complete the code integration to product • Write the corresponding technical documents and patents	1、Basic Requirements Solid university background in pure math, applied math, system programming 2、Professional Knowledge • Classic algorithm theory, deep knowledge of computer architecture • Proficient in any high-level programming language (Python, C++, Java, ...) 3、Additional Requirement • Experience in clouds, distributed programming, storage systems, machine learning implementation
Researcher 2	• Combinatorial optimization for scheduling, statistical models • Research and development of new mathematical frameworks for bin-packing, graph optimization	1、Basic Requirements Solid university background in pure math, applied math, system programming 2、Professional Knowledge • Combinatorial optimization experience or expert in some advanced math • Some experience in any high-level programming language (Python, C++, Java, ...) 3、Additional Requirement • Classic algorithm theory, deep knowledge of computer architecture

HUAWEI

Department: Cloud BU

Job Title	Responsibilities	Requirements
Software engineer	1. Maintenance/upgrade/optimization/ R & D Huawei Cloud Code Analysis framework/tools/algorithms. 2. Responsible for static code scanning, code dynamic analysis, code property verification, automatic defect detection & fixing, intelligent problem diagnosis and repair and other code analysis services (e.g., code search, code syncing, library auto-upgrading) for the next-generation R&D process. 3. We are building a software team to develop a set of open-source tools for programmers, including artifacts managers, CI/CD, build automators, code analyzers, and many more.	1. Be proficient in at least one or more mainstream programming languages such as C/C++, JAVA, JavaScript, Python, and Golang. 2. With certain degree of software development capabilities and DevOps domain knowledge, proficient in using various software development tools
System Engineer	1. Responsible for distributed database platform and product design, development and testing. 2. Responsible for the industry-leading cloud-to-terminal kernel database development, based on operating system kernel technology to build high-performance, high-availability core competitiveness. 3. Responsible for distributed database platform architecture design and long-term evolution, responsible for exploring new technologies in the field of database kernels and building long-term competitiveness. 4. Responsible for the integration of AI ability into distributed database architecture, including DB for AI(big data analysis, data classification, regression analysis) and AI for DB(optimizer and executor engine with AI). 5. Write the corresponding technical documents and patents	1. Master's degree or above, major in compute science, communication engineering, software and mathematics, etc. experience in DBMS, OS, filesystem development is preferred 2. Proficient in C/C++ programming, familiar with Linux environment programming. 3. Experience in using one or more general-purpose databases (MySQL, MariaDB, PostgreSQL, MongoDB, Cassandra, SAP Hana, Oracle, SQL Server, ChronosDB, etc.). 4. Participate in MySQL, MariaDB, PostgreSQL, Clickhouse, MongoDB, Cassandra and other database open source community is preferred. 5. Experience in operating system and file system development is preferred. 6. Have coding experience of database field, familiar with SQL and storage engine priority.

HUAWEI

Department: IC- Intelligent Computing

Job Title	Responsibilities	Requirements
Algorithm engineer 1	1. Responsible for the design, development, verification and delivery of one technical field in graph mining area, solve the industry problems in the field of graph mining, build best technical competitiveness in industry, the technical field of graph mining area include but not limited to connected components, triangle count, pageRank, closeness, personal pageRank, betweenness, maximal clique, Louvain algorithm, graph neural network and so on; 2. Responsible for achieving the target of one algorithm modular in the project, i.e. build long-term competitiveness by designing/optimization, inventing/innovation on graph mining algorithm area with mathematical/theory breakthrough; 3. Performance testing and optimization of algorithms; 4. Responsible to cooperate with academic/industrial partner (university/institute/startup etc.) to work together on one graph mining algorithm field and delivery promising algorithm results to product;	1. PhD degree; 2. Familiar with distributed graph data processing framework, including but not limited to Pregel, Graphx, PowerGraph, etc., and experience in relevant code development; 3. Experience in the use and development of graph database such as Cayley, Titan or Neo4j; 4. Solid theoretical knowledge in graph theory, capable of applying graph theory to solve large-scale graph data mining problems end-to-end; 5. Experience in graph mining algorithm with linear algebra language is preferred; 6. Understanding deep neural networks, experience in using graph neural network to solve practical business problems is preferred. 7. Strong programming skills with at least one of language C++/Java/Scala/R
Algorithm engineer 2	1. Grasp the cutting-edge technology and development trends in the machine learning algorithm areas which you are responsible for; 2. Responsible for the design, development, verification and delivery of one key algorithm field in machine learning area, algorithm field including but not limited to classification, clustering, tree, random forest algorithms; responsible for the analysis of algorithm performance bottlenecks and propose algorithm solutions to improve the algorithm performance; 3. Responsible for achieving the target of the algorithm in the project, i.e. build long-term algorithm competitiveness by designing/optimization, inventing/innovation on algorithm with mathematical/theory breakthrough; 4. Responsible to cooperate with academic/industrial partner (university/institute/startup etc.) to work together on the algorithm you responsible for.	1. PhD degree ; 2. Understand the principles of big data algorithms, familiar with mathematical computing and common big data computing models in the industry, including but not limited to statistical models, matrix calculation methods, machine learning algorithm principles, and deep learning algorithm principles; 3. Familiar with big data open source components such as Hadoop, Spark, Flink, and have high-performance programming experience; 4. Familiar with one of programming language Scala, Java, C ++; 5. Have good algorithm research and analysis abilities, can quickly analyze industry top conference papers.

Department: IC- Intelligent Computing

Job Title	Responsibilities	Requirements
System Engineer	Huawei Russia's rapid growth has created an excellent opportunity to build and grow your career and make a big impact to everyone's life. This position will directly contribute to the overall Intelligent Computing & IT security architecture at Huawei. Huawei Russia is currently looking to hire a Hardware Based Cryptography Researcher. § Responsible for hardware based cryptography researching technologies in Huawei Intelligent Computing & IT products. § Responsible for technical planning for Huawei mobile products in the area of hardware based cryptography, and chartering of technical projects to research identified security technologies and solutions. § Responsible for the incorporation of technical project output into Computing & IT products, and provide technical support for initial product releases.	1. PhD in computer science, cryptography, or related fields with focus on security. PhD is preferred. 2. Experience in security research and development, preferably in the area of cryptography and hardware accelerator such as FPGA or GPU. 3. Familiar with server, vehicle and IoT products, and have development experience with Linux and FPGA platform. 4. Familiar with RTL programming languages . 5. Experience with common Linux Development Toolchains such as GCC, Git, Gerrit, GDB, Static Analysis 6. In depth knowledge of crypto algorithms. 7. Familiar with common security threats to server. 8. Great team work, and experience in collaborating with leading security experts in academic or industry. 9. Fluent in English with good track of record of publications in security conferences and/or journals. 10. Occasional domestic and internal travel is expected.
Security Engineer	As the vulnerability researcher, this position delivers team's competence in application assessment, mainly focusing on binary exploitation, including following: 1. Perform black, grey and white box security assessment of applications. 2. Perform the research of open source libraries and prepare proof of concept for 0-day vulnerabilities 3. Develop special tools for automation of routine tasks 4. Develop recommendation to enhance Huawei development process	1. Practical experience in black/grey/white box application testing and reverse engineering; 2. Deep knowledge of binary vulnerabilities exploitation technics; 3. Strong skills in at least one programming language (python, go, C++, C#); 4. Deep fuzzing skills; 4. CTF or public Bug Bounty programs participation will be a major plus; 5. Public speeches at international competition will be a major plus; 6. Penetration testing skills will be a major plus; 7. PHD.(or Bachelor, Master with CTF World Rank Top 50.)

HUAWEI

Department: DS&IV-Data Storage and Intelligent Vision

Job Title	Responsibilities	Requirements
Data Compression Algorithm Research Engineer	1. Take part in lossless data compression area research and development trends to build industry-leading data reduction competitiveness for enterprise storage systems. 2. Analyze existing lossless data compression approaches and algorithms for the ways of speed and compression ratio improvement. 3. Contribute to design, development, verification and delivery of lossless data compression algorithms providing higher efficiency than existing analogs (by compression ratio and/or performance) 4. Algorithms performance optimization	1. Deep knowledge in algorithms and data structures domain, strong skills in algorithmic problems solving. 2. Be familiar with lossless data compression algorithms basics such as LZ compression, Huffman coding. Familiarity with modern compression algorithms such as LZ4, ZSTD is a plus. 3. Strong programming skills in C/C++. 4. Knowledge of other data reductions technologies is a plus. 5. Have experience of optimizing algorithms performance for target platforms (x86 and/or ARM) is a plus. 6. Good communication skills, be able to communicate fluently in English. Enthusiastic about technology, forward-looking, innovative thinking and capability in implementation and delivery
Human-computer interaction(HCI) algorithm engineer	1. Take charge of algorithm research and prototype development in the machine-machine interaction field, including space gesture recognition, touch gesture recognition, voice control, and multi-modal HCI technologies. 2. Be responsible for algorithm research, prototype development, and product-based delivery in the AI field, including online (digital ink) and offline (OCR) handwriting recognition, face detection, and tracking.	1. Have a basic command of HCI interaction technologies, including gesture recognition, stylus pattern recognition, intelligent recognition of graphics and text, and remote collaboration. 2. Be familiar with audio technologies, including audio feature extraction, understanding, and classification, KWS, ASR, TTS, NLP, voiceprint identification, and blind source separation. Image classification/segmentation, behavior recognition, and image enhancement speech; 3. Participants who have participated in intelligent chatbot/enterprise screen/smart home/smart handwriting recognition projects are preferred. 5. Have a background in computer vision and graphics, and be familiar with image segmentation algorithms, semantic segmentation algorithms, and face detection and tracking algorithms. 4. Familiar with common machine learning algorithms and deep learning. Experience in CNN or RNN networks is preferred. 5. Have a good command of C/C++ and Java programming languages. Experience in Android development is preferred.
Software trust algorithm	1. Take part in security research and development trends to review the security solutions of enterprise storage systems. 2. Track the latest development of the cryptography in the industry and the state of art in the security design of the data storage industry. 3. Select/Design new algorithms to improve the efficiency and effectiveness of our security solution in the cases such as key distribution and data compression after encryption. 4. Algorithms performance optimization	1. PhD in CS, EE or Mathematics. Recently got PhD degree (e.g. from 2019 year) or going to get PhD degree in up to 2022 year. 2. Deep knowledge in cryptographic algorithms, strong skills in algorithmic problems solving. 3. Strong programming skills in C/C++. 4. Knowledge of other security algorithms such as multiparty computing, privacy protecting argorithms (e.g., k deterministic) is a plus. 5. Have experience of optimizing cryptographic algorithms performance for target platforms (x86 and/or ARM) is a plus. 6. Have experience of OS security and hardware security is a plus. 7. Good communication skills, be able to communicate fluently in English. Enthusiastic about technology, forward-looking, innovative thinking and capability in implementation and delivery

HUAWEI

Department: DC-Data Communication

Job Title	Responsibilities	Requirements
Senior software engineer	• Contribute to the development and maintenance of LLVM-based language server; • Develop services and components for IDE used by developers for C/C++ programming; • Implement different refactoring features according with customer needs; • Contribute important bug fixes and patches to open source community; • Profile, analyze and optimize the created software; • Collaborate with internal and external team members to solve complex issues.	• Strong background in C++ development; • Developing and maintaining LLVM framework based tools; • Large-scale open source development; • Knowledge of object-oriented development and design best practices; • Experience in developing algorithms and working with complex data structures; • Familiar with development tools architecture and design (IDE, toolchain, and debugger); • Knowledge/experience of clangd language server is a plus;

Moscow

Department : T&A-Transmission & Access

Job Title	Responsibilities	Requirements
Java Software Engineer	Optical transmission network system planning, site design, network maintain application development and architecture evolution: • Design and develop scalable, re-usable and high-quality source code • Participate in planning, implementation, testing and release activities • Share and apply knowledge and best practices in a multinational team • Research on new branches of technology to be implemented in the project	Major in software engineering or related. More than 2 years work experience in Java programming. Experience in microservice system, distributed computing, performance/resource optimization is preferred. • Knowledge of Java, data structures, programming concepts and design patterns, relational databases • Experience of git version control system • Basic knowledge of linux console

HUAWEI

Department : Wireless

Job Title	Responsibilities	Requirements
Algorithm engineer 1	1、Development of innovative algorithms for next generation Wireless (5G) telecommunication systems. Participation in development of system level architecture of radio transmitters and receivers, estimation of feasibility, analysis of risks and difficulties. 2、Modern signal processing techniques in digital domain, mathematical modeling and correction of imperfection of analog devices (power amplifiers, up/down converters, local oscillators, passive intermodulation and antenna array). 3、Building proof-of-concepts prototypes to evidently demonstrate the advantages of emerging solutions, development and delivery for integration to product 4、Coordinating R&D activities, documentation and presentation of results	1、PhD degree in Applied Mathematics , Radio Physics, Information Transmission or related major. 2、Knowledge of mathematics (Matrix , statistics, regression, random processes, probability theory), familiar with deep-learning/neural networks and other nonlinear regression approaches. Stochastic and meta-heuristic optimization methods. 3、Familiar with Matlab/Simulink and toolboxes (Digital Signal Processing, Communication, Filter Design, etc). Experience in algorithm implementation with C/C++/Python languages, interfacing with Matlab (mex files). 4、Understanding FPGA/ASIC design flow, knowledge of DSP/CPU architectures or electromagnetic simulation 5、Good verbal and written communication skills in English
Algorithm engineer 2	1、 Be responsible for technology research and algorithm innovation, design, feasibility analysis, simulation evaluation, and delivery verification in the 5G and future communications fields, and be responsible for the end-to-end algorithm performance. 2、 Be responsible for PHY/MAC/RRM algorithm design, simulation analysis, and prototype verification. 3、 Be responsible for key technologies for future network deployment in the PHY and HighLayer domains. Be able to propose new ideas and ideas based on the applications of vertical industries. 4、 Be responsible for communication system technology research and system analysis and design. 5、 Be responsible for the research, design, verification, and delivery of mobile network AI, big data mining algorithms, cloud computing architecture, and solutions.	1、PhD degree in Applied Mathematics 2、Knowledge of mathematics (Matrix , statistics, regression, random processes, probability theory), familiar with deep-learning/neural networks. 3、Stochastic and meta-heuristic optimization methods. Has strong algorithm design, implementation and optimization capabilities. Familiar with Matlab/Simulink and toolboxes (Digital Signal Processing, Communication, Filter Design, etc.). Experience in algorithm implementation with C/C++ languages, interfacing with Matlab (mix files). 4、Good verbal and written communication skills in English.
Algorithm engineer 3	1、We need algorithm engineer with deep algorithm and software background to improve the high-performance distributed computing efficiency of the next-generation wireless flagship 5G/5.5G base station products. 2、We also need a team of people who work with engineers and managers in multiple technical areas around the world to achieve goals.	1、PhD degree in Computer Science or Applied Mathematics with several years of work experience. 2、Have a good command of the algorithm principles of operation optimization and be proficient in mathematical modeling based on business problems. Fully understand the application scenarios, application conditions, and software implementation complexity of the algorithm, and have project or research experience in solving application problems. 3、Have a proficient command of the design and implementation of sequential, parallel, cache-efficient, external-memory, and write-efficient algorithms for fundamental problems in computing. 4、Experience in models of computation, algorithm design and analysis, and performance engineering of algorithm implementations. 5、Experience in C and C++ is preferred.

HUAWEI

Department : GTS - Global Technical Service

Job Title	Responsibilities	Requirements
Big data engineer	• Making sure 5G software stack is fast, efficient and highly secure. This includes: • Performance and memory size analysis and optimization • Development of advanced features and optimizations in both proprietary and open-source toolchains and system software components (compilers, libraries, runtimes, hypervisors, etc.) • Development of software tools for security hardening • Contribution of developed code to open-source communities • Providing best development tools for the company's product groups. This includes: • Development of both static and dynamic verifiers • Development and tuning of super-fast build systems • Development of other tools enabling software engineering / architectural innovations	• 5+ years of software development experience, preferably in system software development tools / security software areas • Strong C / C++ knowledge • Strong knowledge of algorithms and algorithmic complexity theory • Experience of working in Linux environment; advanced knowledge of Unix command-line development tools • Conversationally fluent English. A language certificate is not required, but ability to pass an interview in English is a must. • Knowledge of computer architecture principles and experience of working on machine code level is a big plus • Experience of working on ARM architecture is a big plus • Experience in design of complex systems (either as an architect or a leading developer) is a plus • Experience of working in large multinational technology companies is a big plus • Track record of participating in recognized technical conferences (either as a speaker or a program committee member) is a plus
Operation research engineer	We are hiring researchers and research engineers in the related areas at all levels. The main goal of our lab is to build mathematical models and design high-performance mathematical optimization algorithms for business problems such as base station type planning and location selection, task-worker scheduling, resource network planning, and large scale mixed integer optimization.	The candidate must have strong mathematical backgrounds. Candidates with the ability of mathematical modelling in the area of Graph Theory, Network Flow Optimization, Combinatorial Optimization, Mixed integer optimization, Large-scale optimization, Multi-objective optimization, and any other optimization related fields are preferred. Master any one of the following skills is a plus: • Experience in network flow optimization, routing plan, integer optimization • Having Rich experience in solving real-world large-scale optimization problems • Having rich experience in optimization solvers such as CPLEX, Gurobi, CBC • Having proved records, such as academic publications, patents, awards in competitions, etc

HUAWEI

Department: Cloud BU

Job Title	Responsibilities	Requirements
Software engineer	1. Participate in the R&D tool data platform solution architecture design and key technology breakthroughs, build R&D field big data standards, methods and technologies 2. Responsible for static code scanning, code dynamic analysis, unit test analysis intelligent problem diagnosis and repair and other code analysis services (e.g., code search, code syncing, library auto-upgrading) for the next-generation R&D process	1. Major in computer related majors, such as big data, mathematics, machine learning, master's degree or above, priority in doctoral degree 2. With certain degree of software development capabilities and DevOps domain knowledge, at least one or more mainstream programming languages such as Java, Python, etc., proficient in using various software development tools 3. Familiar with the theory and technology of big data, master common data modeling methods and theories, familiar with common open source big data platform technologies such as Hadoop and Sprak, and master their characteristics and architecture.

Saint-Petersburg

Department: IC-Intelligent Computing

Job Title	Responsibilities	Requirements
Crypto-Algorithm Research Engineer	1. Take part in security research and development trends to review the security solutions of enterprise storage systems. 2. Track the latest development of the cryptography in the industry and the state of art in the security design of the data storage industry. 3. Select/Design new algorithms to improve the efficiency and effectiveness of our security solution in the cases such as key distribution and data compression after encryption. 4. Algorithms performance optimization	1. PhD in CS, EE or Mathematics. Recently got PhD degree (e.g. from 2019 year) or going to get PhD degree in up to 2022 year. 2. Deep knowledge in cryptographic algorithms, strong skills in algorithmic problems solving. 3. Strong programming skills in C/C++. 4. Knowledge of other security algorithms such as multiparty computing, privacy protecting algorithms (e.g., k deterministic) is a plus. 5. Have experience of optimizing cryptographic algorithms performance for target platforms (x86 and/or ARM) is a plus. 6. Have experience of OS security and hardware security is a plus. 7. Good communication skills, be able to communicate fluently in English. Enthusiastic about technology, forward-looking, innovative thinking and capability in implementation and delivery

HUAWEI

Department: DS&IV-Data Storage and Intelligent Vision

Job Title	Responsibilities	Requirements
Human-computer interaction(HCI) algorithm engineer	1. Take charge of algorithm research and prototype development in the machine-machine interaction field, including space gesture recognition, touch gesture recognition, voice control, and multi-modal HCI technologies. 2. Be responsible for algorithm research, prototype development, and product-based delivery in the AI field, including online (digital ink) and offline (OCR) handwriting recognition, face detection, and tracking.	1. PhD student graduated from 2019-2022. 2. Have a basic command of HCI interaction technologies, including gesture recognition, stylus pattern recognition, intelligent recognition of graphics and text, and remote collaboration. 3. Be familiar with audio technologies, including audio feature extraction, understanding, and classification, KWS, ASR, TTS, NLP, voiceprint identification, and blind source separation. Image classification/segmentation, behavior recognition, and image enhancement speech; 4. Participants who have participated in intelligent chatbot/enterprise screen/smart home/smart handwriting recognition projects are preferred. 5. Have a background in computer vision and graphics, and be familiar with image segmentation algorithms, semantic segmentation algorithms, and face detection and tracking algorithms. 6. Familiar with common machine learning algorithms and deep learning. Experience in CNN or RNN networks is preferred. 7. Have a good command of C/C++ and Java programming languages. Experience in Android development is preferred.
Data Compression Algorithm Research Engineer	1. Take part in lossless data compression area research and development trends to build industry-leading data reduction competitiveness for enterprise storage systems. 2. Analyze existing lossless data compression approaches and algorithms for the ways of speed and compression ratio improvement. 3. Contribute to design, development, verification and delivery of lossless data compression algorithms providing higher efficiency than existing analogs (by compression ratio and/or performance) 4. Algorithms performance optimization	1. PhD in CS, EE or Mathematics. Recently got PhD degree (e.g. from 2019 year) or going to get PhD degree in up to 2022 year. 2. Deep knowledge in algorithms and data structures domain, strong skills in algorithmic problems solving. 3. Be familiar with lossless data compression algorithms basics such as LZ compression, Huffman coding. Familiarity with modern compression algorithms such as LZ4, ZSTD is a plus. 4. Strong programming skills in C/C++. 5. Knowledge of other data reductions technologies is a plus. 6. Have experience of optimizing algorithms performance for target platforms (x86 and/or ARM) is a plus. 7. Good communication skills, be able to communicate fluently in English. Enthusiastic about technology, forward-looking, innovative thinking and capability in implementation and delivery.

HUAWEI

Department: GD-General Development

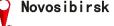| Job Title	Responsibilities	Requirements
Coding Theory Senior Researcher	(1) Constructing model, coding and verifying the efficiency of the model for product on-demand, and make sure it corresponds with the designed specifications. (2) Analyze system running efficiency, develop system-level optimization theory and new algorithms for product on-demand. (3) Participate in industry academic conferences, learn about advanced research experience in academia, according to the key technologies or bottlenecks of the product, use external academic forces to carry out technical cooperation and attract more experts from academia and industry.	1. (1) PhD in applied mathematics, coding theory, and related fields; have a deep understanding in algorithm theory, be good at data structure and typical and classical algorithms. 2. (2) At least 3 years of experience in algorithm, have excellent team co-operation realization, successful commercial projects that use coding theory technologies (such as efficient compression or decompression, accurately and quickly searching) to achieve technical objectives, and experience in technical project management and team management. 3. (3) Have programming capabilities, be familiar with at least one mainstream programming language (such as Python, C/C++, and Java), and be able to complete algorithm prototype implementation, debugging, and verification. 4. (4) Be able to analyze and implement new algorithms and solutions from leading open source communities and academic papers. In addition, the algorithm adaptability and extensibility issues are resolved to support the algorithm productization. 5. (5) Fluent English, good communication skills and good work ethic.
Graph Algorithm Senior Researcher	(1) Be responsible for the analysis, algorithm design, and development of technical projects. (2) Use external academic forces to conduct technical cooperation and attract more academic and industry experts. (3) Participate in industry academic conferences, learn advanced research experience from academia, and expand product influence.	1. (1) Doctoral or master's degree in computer science, applied mathematics, combinatorial mathematics, topology, or related fields; understand the research field and current trends of graph algorithms. 2. (2) Have a proficient command of the implementation principles and application scenarios of graph-related algorithms, such as path search and optimization, network flow, search tree, spanning tree, graph database, and knowledge graph, and publish related research papers in large conferences or journals. 3. (3) Have 0 to 3 years of working experience in graph algorithms and have successful business projects using graph algorithms to achieve technical goals. 4. (4) Have programming capabilities, be familiar with at least one mainstream programming language (Python, C, or Java), and be able to implement, debug, and verify algorithm prototypes. 5. (5) Experience in technical project management and willing to work with others. 6. (6) Fluent English, good communication skills and good work ethic.

HUAWEI

Department: GD-General Development

Job Title	Responsibilities	Requirements
Optimization Senior Researcher	(1) Take the responsibility of analysis, algorithm design and development task in technical project. (2) Use external academic forces to carry out technical cooperation and attract more experts from academia and industry. (3) Participate in industry academic conferences, learn about advanced research experience in academia, and expand product influence.	1. PhD in applied mathematics, operations research, artificial intelligence, and related fields; have influence in the industry or academia; understand the latest research achievements and development trends. 2. 0-3 years work experience in industrial optimization, successful commercial projects that use optimization technologies (such as convex planning, linear planning, and meta-heuristic optimization) to achieve technical objectives, and experience in technical project management and team management. 3. Have a solid mathematical background in one or more topics, such as random optimization, convex and non-convex optimization, and dynamic optimization. Publish related research papers in large conferences or journals. 4. Have programming capabilities, be familiar with at least one mainstream programming language (such as Python, C, and Java), and be able to complete algorithm prototype implementation, debugging, and verification. 5. Fluent English, good communication skills and good work ethic.

HUAWEI

Department: CSI – Central Software Institute

Job Title	Responsibilities	Requirements
Junior Compiler Engineer	• Maintenance and refactoring of the existing proprietary compiler code base; • Development of auxiliary compiler modules; • Baseline compiler debugging; • Compiler test coverage improvement; • Compiler performance measurement and analysis;	• Two or more years of software development experience in a commercial environment; • Good knowledge of Java SE 8 and greater; • Technical English; • Strong desire to thoroughly study the inner workings of compilers, interpreters, and virtual machines and make own contributions to the respective theory and practice; Perfect opportunity for fresh and soon-to-be graduates (BS/MS: graduate during 2020~2022; PhD: graduate during 2018~2022) in a related major

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Department: Cloud BU

Job Title	Responsibilities	Requirements
AI Algorithm Expert / Senior Engineer	1) Design, develop highly competitive AI algorithms and systems, as well as hardware-software co-optimization of the AI algorithms, in at least one of the AI domains, including but not limited to machine learning, deep learning, reinforcement learning, computer vision, natural language processing, optimization, recommendation/search, etc. 2) In-depth optimize the AI algorithms with application to intelligent city, transportation, medicine, internet, manufacturing, astronomy, etc.	1) Having academic or industrial background in computer science, or math, or machine learning related areas. 2) Be familiar with key algorithms, computing engine/framework (TensorFlow, PyTorch, etc), in one or more of the AI domains, including but not limited to machine learning, deep learning, reinforcement learning, computer vision, natural language processing, optimization, recommendation/search, etc. Candidates with practical experience of in-depth optimization of these algorithms are preferred. 3) Be familiar with at least one of the following programming language: Python/C++/Java, and commonly used design patterns in software engineering. Candidates with plenty of practical project experience and strong software engineering/math skills are preferred. 4) Candidates with knowledge and project experience in the following cutting edge directions are preferred, which include but not limited to few/zero shot learning, fine-grained learning, transfer learning, weakly supervised learning, unsupervised learning, meta learning, model interpretability, model compression, data augmentation, automl. 5) Candidates having full stack knowledge of AI are preferred, including but not limited to AI hardware architecture, AI computing engine, distributed machine learning system, hardware-software co-optimization, etc. 6) Having strong enthusiasm in working around AI project, and strong communication skills, responsibilities and team spirit. Perfect opportunity for fresh and soon-to-be graduates (BS/MS: graduate during 2020~2022; PhD: graduate during 2018~2022) in a related major.

HUAWEI

Department: Cloud BU

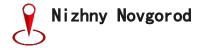| Job Title	Responsibilities	Requirements
Big Data Expert / Senior Engineer	1) Ability to work independently taking responsibility for the design and development of big data distributed computing engine features; 2) Ability to seek and identify the effective ways to optimize distributed computing, storage and communication; 3) Ability to assume the Owner of the team business sub-unit and take the responsibility for road sign planning and demand clarification.	1. Academic or professional background related to the spheres of computer science, mathematics and machine learning. 2. Proficiency in one or few programming languages, include but not limited to JAVA/SCALA/PYTHON/C/C++, besides, deep knowing of the following programming languages is preferred: Go/Rust/Shell/Ruby/JavaScript. 3. Experience working with open source projects related to Big Data is preferred, projects include but not limited to Flink/Spark/Storm/Hadoop/HBase/HDFS/Yarn/Redis/MongoDB/ElasticSearch/ClickHouse. 4. Deep understanding of distributed architectures and systems principles, including but not limited to reliability and state consistency. 5. Deep understanding of database principles and related data structures and related working experience is preferred, data structures include but not limited to B+ Tree/LSM Tree/ART; deep understanding of SQL compiling, optimizations and execution plan optimizations and experience of related practical usage is preferred. 6. Understanding or deep understanding of software and hardware binding technologies is preferred, including but not limited to GPU/FPGA. 7. Passion to work around Big Data projects, strong communication skills, sense of responsibility and team spirit; good skill in project management and risk awareness. 8. Ability to search and read English papers, be able to track the latest research results of relevant top conferences and research institutions at the appropriate times, and share them at the appropriate times. 9. Proficiency in Linux environment, ability to work independently to build up distributed clusters. Perfect opportunity for fresh and soon-to-be graduates (BS/MS: graduate during 2020~2022; PhD: graduate during 2018~2022) in a related major.
AI/NLP Software engineer	1. Work on the world-class developer tools and services to support Huawei cloud and compute business growth. 2. Create the most intelligent developer experiences by leveraging code analysis, compiler optimization and machine learning technologies. 3. Research on the cutting edge AI technologies to keep improving the models.	1. Ideal candidates will have the following experiences: 2. Programming languages, domain specific languages, compiler and code analysis. 3. Strong understanding of common data structures and algorithms and problem solving skills. 4. Working knowledge and understanding of main principles of statistical learning/machine learning. 5. Working knowledge and understanding of deep learning based approaches to Natural Language Processing (W2V, LSTM, BERT, etc). 6. Pytorch/Tensorflow/Keras/DeepLearning4J – working experience with least one of this frameworks. 7. Working knowledge of Python and at least basic knowledge of Java. 8. Programming challenges require skilled PhD Students and PhDs.

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Department: Intelligent Computing

Job Title	Responsibilities	Requirements
Math Library Architect	1. Responsible for the plan and design of the math library architecture of Huawei Kunpeng ARMv8 architecture processor, and improve the execution efficiency of the math library; 2. Responsible for the performance optimization of HPC and AI applications, and continuously lead the development team to build a competitive and leading math library. 3. Cooperate with surrounding team of Huawei Intelligent Computing & IT product line, build HPC & AI end-to-end solution capability, combine with industry's optimal implementation and customer demand, to continuously improve product competitiveness.	1. Familiar with CPU, GPU micro-architecture, compiler principle and CPU pipeline software optimization technology; 2. Have in-depth understanding of one of MKL, IMSL, ACML or other related open source math software. More than 5 years experience in design and development of optimized math software, with successful business delivery experience; 3. Familiar with the algorithm implementation of common math libraries such as BLAS, LAPACK, FFTW, Sparse BLAS, and have experience in optimization of math libraries for CPU and/or GPU micro-architecture. 4. Familiar with one of OpenMP, CUDA, OpenCL or other parallel libraries and programming frameworks, proficient in assembly language. Programming and mathematical challenges require skilled PhD Students and PhDs.
Math Library Software Engineer	1. Responsible for the development and optimization of Huawei Kunpeng architecture processor math library, to improve the efficiency and performance of the math library; 2. Provide competitive computational math algorithms and optimization technology to support the performance improvement of HPC and AI applications.	1. Computer Science, Applied Mathematics or related majors; 2. 2+ years experience in developing common math software such as BLAS, LAPACK, FFTW, Sparse BLAS, etc., with successful business delivery experience; 3. 3+ years of C/C++, assembly, Fortran programming experience (at least one); 4. Familiar with one of OpenMP, CUDA, OpenCL and other parallel libraries and programming frameworks, have a certain understanding of one of MKL, IMSL, ACML and other open source math libraries. Programming and mathematical challenges require skilled PhD Students and PhDs.

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Department: Cloud BU

Job Title	Responsibilities	Requirements
Engineer	• Be an instrumental part of professional distributed international R&D team and efficiently communicate across geographies and time zones; • Proactively take part in R&D decision making, development and support activities; • Conduct and automate data analysis for large time series data using numerical methods of math statistics (multivariative statistics, statistical distributions), probability theory, queuing theory etc.; • Deliver technical talks on data analysis methods and used math statistics methods within and outside of the team; • Provide monthly status, progress and plan reports;	1. Solid experience in implementation and developing of general purpose data manipulation algorithms for large time series data (alignment, reduction, grouping, aggregation, filtering, searching, outlier detection etc); 2. Experience in developing and prototyping of special purpose data processing algorithms for correlation analysis, cluster analysis, hierarchical cluster analysis, principal component analysis, factor analysis;
Algorithm engineer	• Be an instrumental part of professional distributed international R&D team and efficiently communicate across geographies and time zones; • Proactively take part in R&D decision making, development and support activities; • Conduct performance analysis and optimization analysis of production Cloud cases using available performance analysis tools; • Advance Cloud performance isolation methodology for production Cloud cases; • Coordinate technical scope of performance monitoring tools • developed within the team; • Design methodology based algorithm for Cloud • resource scheduling for performance isolation; Prototype algorithm's software implementation; • Deliver technical talks on performance analysis and optimization methodology inside and outside of the team; • Provide monthly status, progress and plan reports;	1. Solid knowledge of modern software design principles, software development technology; 2. Solid knowledge of OOP and C++, Python languages; 3. Solid knowledge of multithreading software design principles and parallel programming; 4. Thorough understanding of modern OS design internals and HW processor and platform architectures (Intel x86, ARM); 5. Solid experience in software performance analysis and optimization using performance analysis tools like Linux Perf, Intel Vtune, etc; 6. Understanding of multi-objective optimization, classical combinatorial optimization problems and related algorithms; 7. Understanding of algorithms of linear, integer, semi-definite programming, combinatorial optimization; 8. Practical experience of using existing commercial or open-sourced optimization solvers, such as SCIP, CPLEX, GUROBI and CLP is a plus; Good communication and presentation skills; 9. Intermediate English level (written and spoken); 10. Influencing skills and technical leadership experience (scrum master or tech lead role);

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Department: Cloud BU

Job Title	Responsibilities	Requirements
Software engineer	• Be an instrumental part of professional distributed international R&D team and efficiently communicate across geographies and time zones; • Proactively take part in R&D decision making, development and support activities; • Research, design and prototype HW and SW based performance monitoring tools; • Create and update documentation for developed software • components and tools; • Help in performance monitoring of production Cloud cases using developed tools; • Deliver tech talks clarifying features of developed components and tools; • Collaborate with open source software development community; • Contribute into related open source projects (Linux Perf, PIN/DynamoRIO, KVM etc); • Provide monthly status, progress and plan reports;	1. 10+ years of experience in professional software development for GNU/Linux OS; 2. Solid knowledge of modern software design principles, software development technology and usage experience of related programming tools (VCS, build, deployment, support); 3. Good skills in OOP and solid knowledge of C, C++ or Java languages; 4. Solid knowledge of GNU/Linux OS API, its design and internals; 5. Good skills in relational DB design and SQL programming language; 6. Good communication and presentation skills; 7. Intermediate English level (written and spoken);

Thank you!

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