Job Title	Researcher (Software and systems engineering)
Keywords	Collaborative agile development methods, DevOps, Cloud shift, Detection of development project risks, Automatic program repair, Automatic test generation/execution, AI software testing and verification, Embedded system performance verification, Model based systems engineering, High safety system development (safety risk analysis, functional safety), Embedded software, Autonomous driving software, Quantum software development environment.
Responsible for:	Service Systems Innovation Center
Job Function:	Research and development for large-scale enterprise systems and embedded systems such as automobiles and industrial equipment.

Main Responsibilities

Research and development of software engineering to improve the efficiency and quality of software development to increase business value. By using cutting-edge technologies such as AI, we will improve the work of each process from development to operation and maintenance by analyzing source code, development performance data, usage data, etc.

Major research topics:
Research area: Collaborative agile development methods, DevOps, Cloud shift, Detection of development project risks, Automatic program repair, Automatic test generation/execution, AI software testing and verification, Process mining, Embedded system performance verification, Causal relationship analysis between development KPIs, Model based development (model based systems engineering), High safety system development (safety risk analysis, functional safety), Embedded software, Over-The-Air, Autonomous driving software, Quantum software development environment.
Application area: AI-based digital solutions, financial systems, government and municipal systems, automotive, railroad, medical equipment, elevator systems, storage systems

The role on offer will contain the following responsibilities;
・[Systems Modernization]
Research and development of systems modernization techniques that promote digital transformation of enterprise systems and embedded systems,
・[Project Management]
Research and development of global agile development process support method,
・[Software Verification]
Research and development of intelligent software verification / modelling techniques that improve the productivity of system development,
・[Safety Control and Safety Assessment]
Research and development of software techniques that achieve high quality and high safety of systems, and
・[Connected Car Systems]
Research and development of connected car systems.

As part of the role, the candidate will need to be able to;

formulate technical development strategies, develop new techniques through prototyping, publish research papers. More specifically,
・ Developing software engineering techniques related to enterprise systems and embedded systems,
・ Developing testing techniques and tools for traditional algorithmic software and machine-learned software,
・ Consulting for functional-safety and software assessment, and
・ Developing software architecture of autonomous driving and connected car systems.

Job Skills, Experience and Qualifications

Essential
Skills / Experience
・Experience in system design, development or operation, where the system is commercial system or OSS in practical use, or experience in developing tools that support for such system development
・English ability with a TOEIC score of 650 or higher
・Paper publication experience or conference lecture experience

Licences / Competences
  None

Qualifications
M.S. or Ph.D degree in Computer science, Systems Engineering, or Mathematics

Behavioural
・Intellectually curious about new technologies and have a strong desire to learn and grow
・Able to discover a problem in a business division and flexibly propose the solution
・Imagination of actual usage and user values of the developed techniques
・Cooperating with the other team members and incorporating the opinions of business divisions
・Have a strong desire to learn Japanese for communication in business

Desirable
・ Expertise in software and information engineering (e.g. Ph. D degree)
・ Programming skills
・ Work experience in system development projects(enterprise systems, embedded systems)
・ Strong motivation to learn Japanese
  * Although this position allows you to work in English in short and midterm carrer, fluency in Japanese will be a great advantage in your long term career at Hitachi.

Appendix:

See our publication lists:

https://hitachi-dx-engineering-research.github.io/

Job Title	Reseacher (Development and operation of cloud-native application, architecture, and platform)
Keywords	Cloud-native architecture, container management platform, blockchain platform, IoT solution platform, zero-emission data center, DevOps, MLOps, AIOps, and OSS
Responsible for:	Digital Platform Innovation Center
Job Function:	We are engaged in the Research & Development of architecture, platform technology, development and operation technology, and OSS, supporting service computing. Through the research and development in these fields, we will accelerate digital transformation and contribute to the realization of social innovation.

Main Responsibilities

Hitachi is focusing on the creation of digital innovation business, and is required to strengthen its R&D capabilities in cloud computing and IT to support the digital service business by Lumada. We are looking for highly skilled and ambitious individuals who can lead research on architecture, platform technology, development and operation technology, and OSS, and who can contribute to social innovation.

 The role on offer will contain the following responsibilities;
 <Service Creation>
 Research and development of service creation for society innovation, including DX services and sustainability solutions, such as datacenter decarbonization
 <Service Design>
 Research and development of business-oriented cloud architecture, cloud-native/microservice architecture, and cloud-shifting technologies
 <Service Platform>
 Research and development of cloud-native service platforms (container infrastructure, service mesh), OSS development and use, advanced digital technologies (blockchain, etc.)
 <Service Operation>
 Research and development of IT infrastructure and cloud-based system operation and management technologies

As part of the role, the candidate will need to be able to;
 - Research on technology, industry trends, and market trends related to services computing
 - Develop research strategies and roadmaps, and make research proposals
 - Define products and services that meet customer needs by selecting and developing the best approaches and technologies to solve customer problems, and develop prototypes and demos to verify the value of such products and services
 - Provide information and recommendations to the business units from a technical expertise perspective
 - Presentation at research conference, writing papers, internal research reports, and creating intellectual property

Job Skills, Experience and Qualifications

Essential

Skills / Experience

- Experience in research and development of applications and platforms using cloud computing (AWS, Azure, etc.)
- Programming experience (at least one of C, C++, Java, JavaScript, Python, Go, etc.)
- English ability with a TOEIC score of 650 or higher

Licences / Competences

None

Qualifications

- Information Engin
- Master degree or Ph-D

Behavioural
- Intellectually curious about new technologies and have a strong desire to learn and grow
- Imagination of actual usage and user values of the developed techniques
- Cooperating with the other team members and incorporating the opinions of business divisions
- Global collaboration mind
- Positive mindset to learn Japanese language and culture

Desirable
- Certifications in AWS, Azure, Kubernetes, etc.
- Familiarity with OSS (Kubernetes, Hyperleder, NodeRed, etc.), application development using AI and machine learning, and implementation of functionality on GPUs
- Experience in research and development of applications and platforms using cloud computing (AWS, Azure, etc.)
- Japanese language (conversational)

Appendix:

Title: What Hitachi Gained through OSS Initiative "Node-RED" That Can Easily Create Deep Programs
URL: https://www.hitachi.com/rd/sc/story/nodered/index.html

Title: A Fault Diagnosis Method for Fuel Injectors Using Machine Sound
URL: https://ieeexplore.ieee.org/abstract/document/9353183

Title: OpsSC: Decentralized Blockchain Network Operation Workflow for Hyperledger Fabric
URL: https://ieeexplore.ieee.org/document/9680558

Title: Trust Data Sharing and Utilization Infrastructure for Sensitive Data Using Hyperledger Projects
URL: https://ossalsjp21.sched.com/event/rCg7

Job Title	AI Researcher for Social Foundation Digital Service Innovation
Keywords	Machine Learning, Reinforcement Learning, Swarm Optimization, Scientific AI, Geo-spatial Time Series Information Analysis
Responsible for:	AI Innovation research Center
Job Function:	The role of a researcher is developing AI technologies and prototype system and publish research achievements.

Main Responsibilities

AI is Hitachi's focusing and differentiate technologies and it could lead digital transformation to all over the world. Strong and useful AI technologies is needed at all of Hitachi's business to expand the market. Hitachi can offer a candidate an exciting career with many opportunities for personal development within a global and diverse team.

The role on offer will contain the following responsibilities;
・Advanced AI technologies research for social infrastructure, smart city, industry, logistics, IoT; in collaboration with business division to gain domain-specific knowledge and define problems to solve.
・Develop new AI algorithms and applications to improve the customer's business value and to solve social issues by leveraging the Hitachi's capability.
・Develop a prototype application or system to evaluate AI algorithms through programming.
・Publish research report, patent, and academic paper.
・Make a demonstration that is presented at internal and external exhivision events.

As part of the role, the candidate will need to be able to;
・Effective cooperation to satisfy internal stakeholders (Sales, Engineer, and worldwide research team) to achieve team goals
・Proactive and academic approach is required to keep up with the latest market and technology trend globally
・Support the respective Department Manager to establish a strategic research plan to ensure future proof value to support growth of company
・Assist team members to develop a strong technology fit for the market needs
・Inspire and motivate AI researchers to challenge and solve issues for future company growth and based on Hitachi Values
・Attend research events, conferences, meetings making presentation if necessary

Job Skills, Experience and Qualifications

Essential

Skills / Experience

・Demonstration of being able to complete a technical project whilst working effectively with other team members

・Demonstration of working "out of the comfort zone" and overcoming challenges

・Demonstration of obtaining a new skill and being effective with that skill

・Having excellent communication skills

・Having professional programming skills (Python and/or Java with well-known libraries to focus on implementing algorithms, to accelerate development speed, and to improve software quality)

・Having basic knowledge of mathematical and information system

・Showing commitment to an organization

・Flexible and forward thinking

・Foreign language skills - English, Japanese (conversational)

Licences / Competences

　None

Qualifications

　Master's degree, preferably Doctor's degree of engineering/information

Behavioural

・Hard working within a team and acting in accordance with the company's Mission, Vision and Value

・Respect teamwork

・Passion and drive to deliver "can do" attitude

・Global collaboration mind is required

Desirable

・AI research work experience

・Awards or high rank acknowledgement in Analysis Competition

・Development experience of business model

Appendix:

Activity examples

Building Relationships:

"AI for Powering Good" – A joint workshop by Hitachi & Mila

https://www.hitachi.com/rd/sc/aiblog/011/index.html

Abstract: In October 2019, the "AI for Powering Good" workshop was organized as part of a research collaboration project which has been going on between Mila (Montreal Institute for Learning Algorithms) and Hitachi since spring 2019. The workshop was an idea to bring the researchers from both Hitachi and Mila to meet each other and to share and exchange knowledge as networking is a key element for successful collaboration.

Publishing Academic Papers:

I. Suemitsu, H. K. Bhamgara, K. Utsugi, J. Hashizume and K. Ito, "Fast Simulation-Based Order Sequence Optimization Assisted by Pre-Trained Bayesian Recurrent Neural Network," in IEEE Robotics and Automation Letters, vol. 7, no. 3, pp. 7818-7825, July 2022

https://ieeexplore.ieee.org/document/9804857

This paper presents a fast optimization method for the picking order sequence of automated order picking systems in logistics warehouses. In this order sequencing problem (OSP), the fulfillment sequence of the given picking order set is determined to optimize the performance measures such as makespan and deadlock occurrence.

Kato, T.; Kamoshida, R. Multi-Agent Simulation Environment for Logistics Warehouse Design Based on Self-Contained Agents. Appl. Sci. 2020

https://doi.org/10.3390/app10217552

Abstract: It is generally difficult to analyze the performance of a multi-agent system,thus it is important to model a warehouse and conduct simulations to design and evaluate the possible system configurations. However, the cost of modelling warehouses and modifying the models is high because there are various components and interactions compared to conventional multi-agent simulations. We proposed a self-contained agent architecture and message architecture of a multi-agent simulation environment for logistics warehouses to reduce the simulation-model development and modification costs.

Osakabe, Y; Asahara, A; Morita, H. Hitachi Materials Informatics Analytics Platform Assisting Rapid Development. In: AAAI Spring Symposium: Combining Machine Learning with Knowledge Engineering (1). 2020. https://www.researchgate.net/publication/349490951_MatVAE_Independently_Trained_Nested_Variational_Autoencoder_for_Generating_Chemical_Structural_Formula

Abstract: We propose MatVAE–two nested VAEs inde- pendently trained on different datasets. The first VAE, which is trained on a huge open dataset, is a universal generator of chemical structural formulae, and the second VAE, which is trained on a small experimental dataset, learns the structure– property relation. This training framework can be understood as a semi-supervised learning, which is expected to enhance model transferability.

Kujirai, T.; Yokota, T. Greedy Action Selection and Pessimistic Q-Value Updating in Multi-Agent Reinforcement Learning with Sparse Interaction, SICE Journal of Control, Measurement, and System Integration, 12:3, 76-84, 2019 https://doi.org/10.9746/jcmsi.12.76

Abstract: We previously proposed three methods (greedily selecting actions, switching between Q-value update equations on the basis of the state of each agent in the next step, and their combination) for improving the performance of coordinating Q-learning (CQ-learning), a typical method for multi-agent reinforcement learning with sparse interaction. We have now modified the learning algorithm used in a combination of these two methods to enable it to cope with interference among more than two agents.

Job Title	Researcher (Computer Vision and XR)
Keywords	computer vision, extended reality, machine learning, multi-modal recognition, human machine interaction
Responsible for:	Advanced Artificial Intelligence Innovation Center
Job Function:	Research and development of computer vision and XR technologies including development of systems and applications related to metaverse, smart manufacturing & manitenance, video surveillance, document analysis, biopsy measurement and medical application.

Main Responsibilities

Our department has responsibilities for research and development of AI technologies especially related to computer vision and XR (AR/VR/MR) technologies which are widely applied to Hitachi's business regions such as energy, transportation, industry, healthcare, smart cities, IT and so on.

The role on offer will contain the following responsibilities;
- Research and development of computer vision and XR technology
  Conducting research activities and achieving predetermined research results
- Products, systems and applications development
  Designing architectures for products, systems and applications
  Programming and software development
- Joining team and research project management
  Supporting leaders for organization management

As part of the role, the candidate will need to be able to;
- Creating new ideas for computer vision and media processing technologies
- Developing software and hardware for experiments and conducting experiments and evaluations
- Presenting technologies and executing PoC experiments with customers and business unit members
- Writing reports, patents, conference papers and journals
- Finding and understanding the latest technologies and global market trend in the field
- Leading and educating other members in the research team for some specific field
- Proposing new research theme
- Joining discussions and meetings for organization management
- Executing miscellaneous assignments (inventory checking and so on)
- Inspiring and motivating other members to challenge and solve issues or to improve efficiency for future company growth, and based on Hitachi Values (Harmony, Sincerity and Pioneering Spirit).

Job Skills, Experience and Qualifications

Essential
Skills / Experience
- Enough academic knowledge and research experience in the field of either computer vision, XR, machine learning or human machine interaction.
- Programming skills and experience with either of C, C++, C#, Java, Swift or Python.
- Familiarity with machine learning, deep learning, neural network and their programming frameworks such as TensorFlow and PyTorch, TensorFlow, and JAX.
- Communication skills in English
- Having excellent communication and negotiation skills
- Demonstration of being able to complete a technical project whilst working effectively with other team members
- Effective cooperation to satisfy internal stakeholders and all the external stakeholders to achieve team goals.
- Experience of presentation at international conference in AI, computer vision, XR field.

Licences / Competences
None

Qualifications
Either of Electrical Engineering, Information Engineering or Computer Science, preferably a Master or Doctor degree

Behavioural
- Hard working within a team and acting in accordance with the company's Mission, Vision and Value
- Respect teamwork and dealing with staff, customers, business unit members and third party at all levels
- Flexible mindset even in sudden change of the situation
- Passion and drive to deliver, "can do" attitude.
- Global collaboration mind
- Positive mindset to learn Japanese language and culture

Desirable
- Awards or high rank acknowledgement in competitions or technical contests.
- Japanese Language (conversational)
- Strong motivation to learn Japanese
    * Although this position allows you to work in English in short and midterm carrer, fluency in Japanese will be a great advantage in your long term career at Hitachi.

Appendix:

Multifeatured Video Search - Hitachi
https://www.youtube.com/watch?v=jZ3y-ofMnnQ

Solutions to visualize workers' loads - Hitachi
https://www.youtube.com/watch?v=kWTsU0CAE68

Generalizable person re-identification for practical automated video surveillance systems
https://www.hitachi.com/rd/sc/aiblog/044/index.html

Deployment conscious automatic surface crack detection
https://www.hitachi.com/rd/sc/aiblog/032/index.html

Activity recognition using wearable sensors for low-cost deployment
https://www.hitachi.com/rd/sc/aiblog/025/index.html

Job Title	Researcher (Intelligent Media Processing)
Keywords	Natural language processing, knowledge processing, speech recognition, acoustic recognition/diagnosis, XAI
Responsible for:	Advanced Artificial Intelligence Innovation Center
Job Function:	Research and development of artificial intelligence technologies, especially media intelligent processing, such as natual language processing, knowledge processing, speech recognition, acoustic recognition/diagnosis, and XAI(eXplainable AI). The role of a researcher is developing AI technologies and prototype system, and publish research achievements.

Main Responsibilities

Among artificial intelligence technologies, we are working on Research & Development of technologies for handling text, knowledge data, voice and audio data, eXplanable AI. We are developing machine learning, deep learning, pattern recognition, knowledge processing, and inference technologies, as well as applying them to the real world.

The role on offer will contain the following responsibilities;
- Research and development of computer vision and media processing including survey, algorithm design, implementation of prototypes, experiments, writing reports.
- Systems and applications development: implementing AI technologies into real world applications.
- Joining team discussion

As part of the role, the candidate will need to be able to;
- Creating new ideas for computer vision and media processing technologies
- Developing software and hardware for experiments and conducting experiments and evaluations
- Finding and understanding the latest technologies and global market trend in the field
- Inspiring and motivating other members to challenge and solve issues or to improve efficiency for future company growth, and based on Hitachi Values (Harmony, Sincerity and Pioneering Spirit).

Job Skills, Experience and Qualifications

Essential
Skills / Experience
- Experience of presentation at top conferences in the fields of natural language processing, speech processing, acoustic processing, or eXplainable AI.
- Experience of implementing machine learning algorithms or deep learning techniques.
- Communication skills in English or Japanese

Licences / Competences
None

Qualifications
Either of Electrical Engineering, Information Engineering or Computer Science, preferably a Master or Doctor degree

Behavioural
- Respect teamwork and dealing with staff, customers, business unit members and third party at all levels
- Positive mindset to learn Japanese language and culture

Desirable
- Experience of implementing real world applications using AI technologies.

Appendix:

Industrial AI blog
https://www.hitachi.com/rd/sc/aiblog/index.html

Job Title	Researcher (Electromagnetic Application Systems Research Department)
Keywords	Separation and purification of radionuclides, Quality assessment of radionuclides for nuclear medicine, Labelling of radionuclides
Responsible for:	Decarbonized Energy Innovation Center
Job Function:	Research and development of radiochemistry for nuclear medicine (especially for Targeted Radionuclide Therapy (TRT))

Main Responsibilities

Minimally invasive cancer treatment technology is one of Hitachi's focus areas for extending healthy life expectancy and social insurance resilience. Hitachi is now offering radiation therapy as Particle Beam Therapy system, and radionuclide for nuclear medicine as TRT is our new focused area to expand healthcare business. Hitachi can offer a candidate an exciting career with many opportunities within a global and diverse team.

The role on offer will contain the following responsibilities;
Research and development of chemical process for nuclear medicine
- Develop advanced process for separation and purification of medical radionuclides as Actinium-225 produced by nuclear reaction using accelerators
- Investigate and establish radionuclide quality assessment methods for nuclear medicine in accordance to GMP regulations
- Establish automated process of production/separation/purification for a large amount of radionuclide production
- Evaluate biological effects of radionuclides collaborating with external partners
- Investigate and develop radionuclide labeling technologies

As part of the role, the candidate will need to be able to;
- In responsible for some of mission-critical duties, execute research and development activities through experiments, simulations and paper research
- Work with other R&D team members, business units, and external business/technological partners
- Proactive and academic approach is required to keep up with the latest global market and technology trends
- Support to establish a strategic research plan to ensure future proof value to support the growth of the company
- Attend research events, conferences, meetings making presentations if necessary

Job Skills, Experience and Qualifications

Essential
Skills / Experience
- Having a professional skill and knowledge of chemistry, especially radiochemistry
- Having a basic knowledge of nuclear medicine
- Having excellent communication and negotiation skills
- Showing commitment to an organization
- Flexible and positive thinking

Licences / Competences
None

Qualifications
Either of Computer Science, Information Engineering, Electrical Engineering, Mathematics, preferably a Master or Doctor degree

Behavioural
- Hard working within a team and acting in accordance with the company's Mission, Vision and Value
- Respect team work and dealing with staff, customers, suppliers and third party at all levels
- Passion and drive to deliver, "can do" attitude
- Global collaboration mind
- Professional and Positive mind

Desirable
- Some radionuclides handling experience
- Some healthcare research work experience
- Foreign language skills – English(Business level), Japanese(Conversational level)
- Strong motivation to learn Japanese
   * Although this position allows you to work in English in short and midterm carrer, fluency in Japanese will be a great advantage in your long term career at Hitachi.

Hitachi, Tohoku University and Kyoto University Become World's First to Establish Technology for Highly Efficient, High-quality Production of Actinium-225, a Material Required for Internal Radiation Therapy Called TAT

URL: https://www.hitachi.com/News/cnews/month/2021/10/211018.html

Description / Outline: Hitachi, Ltd., Tohoku University and Kyoto University have become the world's first to establish technology for the highly efficient and high-quality production of actinium-225 (225Ac), a substance required for a form of radiation therapy known as targeted alpha therapy (TAT). TAT is a new cancer therapy which combines a substance that emits alpha particles which destroy cancer cells with a compound that selectively accumulates in cancer cells. The combined alpha-emitting agent is administered to a patient to attack cancer cells within the body. It is known to be effective against forms of cancers that are difficult to treat with existing methods of treatment, including cancer cells that are spread widely through the body, and its practical applications are eagerly awaited. The three-party team has now established technology that enables production of high-quality 225Ac in an efficient manner without producing impurities, which are usually difficult to separate, by using an electron linear accelerator with radium-226 (226Ra) as a source material.

Experimental study on the production of Ac-225 using an electron linear accelerator

URL: https://jnm.snmjournals.org.content/62/supplement_1/68

Description / Outline: Ac-225 has nuclear properties well suited for use in targeted alpha therapy and clinical trials have demonstrated the applicability of radiopharmaceuticals containing Ac-225 to treat various cancers. Ac-225 is mainly obtained by radiochemical separation from Th-229 sources, but supply shortages are expected when Ac-225 is generally applied. Thus accelerator-based Ac-225 production systems are desired. In this work, we have carried out an experimental study on the production of Ac-225 using an electron linear accelerator.

Job Title	Researcher (Thermal and fluid systems)
Keywords	Fluid Dynamics, Thermodynamics, Heat Transfer, Simulation, Measurement, AI, Machine Learning, Neural Network, Optimization, Data assimilation, Modeling
Responsible for:	Electrifications Innovation Center
Job Function:	Research and development relating to thermal and fluid systems

Main Responsibilities

Our department focuses on the research and development relating to thermal and fluid systems which include industry, automotive, energy and medical analytical systems to realize decarbonized society and improve QoL. We conduct research on these fields by utilizing the core knowledge of physical phenomena based on fluid dynamics, thermodynamics, heat transfer, and by deepening the technology of data science such as machine learning and optimization.

Hitachi can offer a candidate an exciting career with many opportunities for personal development within a global and diverse team based in Japan to accelerate the implementation of the electrification system in a society with us to improve our life better.

The role on offer will contain the following responsibilities;
 > Thermal and fluid systems
 - Research and development on thermal and fluid products in various field such as mobility (automotive component, etc.), industrial machinery (turbomachinery, inkjet printer, etc.), clinical analyzers, and systems and services using these products.
 > Data science technology and its applications to mechanical systems
 - Research and development of data science technology and its applications to mechanical products, systems, and services
 > Publish research report and patent
 > Internal and external presentation

As part of the role, the candidate will need to be able to;
 - Ensure the research activities closely working with Business Unit engineering team for their project
 - Effective cooperation to satisfy internal stakeholders (Project Management, Engineering Team in Business Unit), and all the external stakeholders to achieve team goals.
 - Proactive and academic approach is required to keep up with the latest standards and market trend globally.
 - Support the respective Project Manager to establish a strategic proactive development plan to ensure future proof design to support growth of company.
 - Cooperative working and support each other with the other research team members to challenge and solve issues or to improve efficiency for future company growth, and based on Hitachi Values (Harmony, Sincerity and Pioneering Spirit).
 - Attend the industry events/conferences/meetings arranged by department, R&D division etc., making presentation if necessary to support local society development.

Job Skills, Experience and Qualifications

Essential

Skills / Experience
- Knowledge of mechanical engineering
- 3D-CAD or related experience.
- Programming skills (e.g. C, C++, Python, Java, MATLAB/Simulink)
- Experience of presentation / paper submission at conference
- Development or/and design experience of mechanical equipment/product/system
- Communication, presentation, and reporting skill of being able to complete a technical project whilst working effectively with other team members.
- Activeness of working 'out of the comfort zone' and overcoming challenges
- Activeness of obtaining a new skill and being effective with that skill
- Having excellent communication and negotiation skills
- Showing commitment to an organization or cause
- Flexible and positive thinking

Licenses / Competences
None

Qualifications
Mechanical engineering, Information engineering, Science (Physics, Mathematics), Master degree or Ph-D

Behavioral
- Hard working within a team and acting in accordance with the company's Mission, Vision and Value
- Respect team work and dealing with staff, customers, suppliers and third party at all levels
- Passion and drive to deliver, "can do" attitude.
- Global collaboration mind is required.
- Professional and Positive mind.

Desirable
- Knowledge of fluid engineering or/and thermal engineering
- Some Engineering work experience
- Some AI research work experience
- Foreign language skills (Japanese , etc.)

Appendix:

Title: Inverse thermal design technique for predetermined temperature distribution using reduced order model of 3D heat conduction simulation and artificial bee colony algorithm (in Japanese)
 Description / Outline: To design a heater that controls a predetermined temperature distribution, the distributions of the heat generation densities for the heater should be designed. Generally, designers adjust the heat generation densities and calculate the temperature distribution by 3D thermal fluid simulations repeatedly. However, this process leads to a long design period because it incurs high simulation cost to achieve the optimum result. To shorten the design period, we have proposed a more efficient thermal design technique that combines the superposition calculation of the reduced order model (ROM), which is constructed from the results of the 3D thermal simulations, and the optimizing algorithm. The ROM decreased the calculation time to estimate the temperature distribution in the heater. Furthermore, we applied the Artificial Bee Colony (ABC) algorithm, which is a type of swarm intelligence, to estimate the optimum combination of the heat generation density distributions of the heater. Our proposed technique has the advantage of being able to calculate the total trial number of the 3D thermal simulations, which was the same as the number of divisions of heater areas. This enabled the designers to estimate the time to achieve the optimum thermal design in advance. Therefore, the proposed technique could be applicable to the thermal design for real products. In this paper, we used this simulation process to design the temperature control unit for a capillary electrophoresis DNA sequencer as an example. The optimizing calculation was completed within only 500 s by using the ROM. The results of the optimization demonstrate that the designed heater controls the three designated and uniform temperature distributions. The measurement results of the temperature distributions of the prototype heater agreed well with the target temperature distributions.
 URL: https://www.jstage.jst.go.jp/article/transjsme/87/904/87_21-00141/_article/-char/ja

Title: Development of automatic charging control optimization technique for continuous-type inkjet printers using charged-droplet flight simulation and Bayesian optimization (in Japanese)
 Description / Outline: Conventionally, repeated experiments by trial and error have been used to improve the printing quality of continuous-type inkjet printers. This is because the trajectories of the ink droplets are affected by external forces such as air drag and Coulomb force and thus their analysis is difficult. In this study, a simulation technique to predict the trajectories of ink droplets, the Kriging model, and a multi-objective genetic algorithm were combined to develop an optimization system which determines a droplet charging pattern with better printing results. To enable parallel evaluation of the printing results with an arbitrary charging pattern, the simulation technique was developed based on OpenFOAM, which is an open-source software for computational fluid dynamics. A multi-objective optimization problem was defined by design variables which control the ink droplet charging pattern and by two objective functions which quantitatively evaluate printing quality from simulation results. The Kriging model was used to calculate the expected improvement of the two objective functions and to maximize this improvement by the multi-objective genetic algorithm (MOGA). The developed optimization system was applied to the digit "9" expressed by a 5×5 dot matrix. As a result, the expected improvement-based (EI-based) Bayesian optimization could find the solution which dominates most of the solutions obtained by the MOGA. Additionally, reaching this solution required only 1/7 of the number of simulations required by the MOGA optimization. The obtained solution was used for an experiment on an actual continuous-type inkjet printer and the quality of the printing results was evaluated. It was confirmed that the printing quality provided by the solution obtained by EI-based Bayesian optimization was sufficiently high, and the usefulness of the developed optimization system was demonstrated.
 URL: https://www.jstage.jst.go.jp/article/transjsme/88/912/88_22-00140/_article/-char/ja

Title: Investigation on Pressure Fluctuation Related to Mild Surge in Multistage Centrifugal Blower With Inlet Guide Vane

Description / Outline: Centrifugal blowers are widely used for gas compression in a variety of industrial fields; however, a wider operating range is required in these machines. Investigations on the generation mechanism of unsteady flow (i.e., surge) are very important to improve the operating range. The purpose of this study is to clarify the generation mechanism of pressure fluctuations in a multistage centrifugal blower equipped with inlet guide vanes (IGVs) upstream during the first stage under the IGVs partially open condition. These pressure fluctuations occur at flowrates when the slope of the total system head curve is steeply negative. According to our previous study on the detailed unsteady pressure measurements, this pressure oscillation is supposed to be the mild surge caused by the positive slope of the head curves at the second to the last stages. The slope of the total system head curve was kept negative due to the steeply negative slope of the head curve during the first stage. Thus, the whole compression system seemed to be stable. To confirm the validity of this hypothesis, system dynamic simulations based on Greitzer's lumped-parameter model were conducted using newly measured static pressure-rise characteristic curves of each stage in a four-stage centrifugal blower. In these simulations, the pressure-rise characteristic curves of the first stage and the second to last stages were modeled as two different actuator disks, and the stabilization/destabilization effects of each stage on the system dynamic characteristics were separately taken into account under the IGVs partially open condition. The system dynamic simulation reproduced the mild surge behavior of the system under the IGVs partially open condition when the slope of the total system head curve was still kept steeply negative. The calculated amplitude and frequency of the pressure fluctuations caused by the mild surge showed satisfactory agreement with the measured ones. However, the inception flowrate of the system instability in the simulation was approximately 7% smaller than that in the measurement. From these results, we confirmed that the pressure fluctuation occurred under the IGVs partially open condition was caused by the mild surge due to the positive slope of the pressure-rise characteristic during the second to last stage. In addition, we found that this mild surge was caused by the stall of the vaned diffusers during the second to last stage.

URL: https://asmedigitalcollection.asme.org/turbomachinery/article/138/11/111003/378612/Investigation-on-Pressure-Fluctuation-Related-to

Title: Efficiency improvement of compressor for refrigerator using 1D CAE and 3D CAE

Description / Outline: This paper describes a new approach to improve compressor efficiency by using 1D CAE and 3D CAE. First, a 1D simulation model of a reciprocating compressor is proposed and the compressor efficiency is analyzed. Then, heat flow in the compressor is analyzed using a 1D thermal network simulation model and the heat receiving process of the refrigerant gas is investigated. Next, gas flow in the compressor is evaluated using 3D CFD and an improved compressor with a new structure is proposed. Finally, the effect of the improved compressor is evaluated through experiments. Results demonstrated that the proposed approach is very effective in actual development.

URL: https://www.jstage.jst.go.jp/article/mej/6/5/6_19-00120/_article/-char/ja

Job Title	Researcher (Electrification technology for a decarbonized society)
Keywords	Electromagnetic, electric circuit, control, fluid dynamics, rollingstock
Responsible for:	Electrifications Innovation Center
Job Function:	Research and development of electric machine design/motor drive/power electronics/thermal dynamics/hydromechanics for mobility, industry, energy, home appliance etc.

Main Responsibilities

Our department focuses on the research and development of electrifications which includes motor drive, power electronics, thermal dynamics, and hydromechanics for railway, automotive, industry, energy and home appliances to realize decarbonized society.

Hitachi can offer a candidate an exciting career with many opportunities for personal development within a global and diverse team based in Japan to accelerate the implementation of the electrification system in a society with us to improve our life better.

The role on offer will contain the following research topics;
> Rotating machine
  - Research and development on PMSM (Permanent Magnetic Synchronous Motor), IM (Induction Motor) and novel concept motors.
> Motor drive control
 - Research and development on motor drive control
> Power electronics
- Research and development on circuit topology, packaging and control of power electronics like DC/DC converter, DC/AC converter etc.
> Electrified systems
 - Research and development on electrified systems whose core technologies are based on motor drive, power electronics, thermal dynamics, and hydromechanics.

As part of the role, the candidate will need to be able to;
- Ensure the research activities closely working with Business Unit engineering team for their project
- Effective cooperation to satisfy internal stakeholders (Project Management, Engineering Team in Business Unit), and all the external stakeholders to achieve team goals.
- Proactive and academic approach is required to keep up with the latest standards and market trend globally.
- Support the respective Project Manager to establish a strategic proactive development plan to ensure future proof design to support growth of company.
- Cooperative working and support each other with the other research team members to challenge and solve issues or to improve efficiency for future company growth, and based on Hitachi Values (Harmony, Sincerity and Pioneering Spirit).
- Attend the industry events/conferences/meetings arranged by department, R&D division etc., making presentation if necessary to support local society development.

Job Skills, Experience and Qualifications

Essential

Skills / Experience

- Motor drive (hardware and software) and power electronics
- Development experience of electrified system for mobility/industry/home appliance
- Demonstration of being able to complete a technical project whilst working effectively with other team members
- Demonstration of working 'out of the comfort zone' and overcoming challenges
- Demonstration of obtaining a new skill and being effective with that skill
- Having excellent communication and negotiation skills
- Showing commitment to an organization or cause
- Flexible and positive thinking

Licences / Competences

- Preferably a driver's license

Qualifications

- Electric, Mechanical, Control, Information engineering, science (Physics, Mathematics), Master degree or Ph-D

Behavioural

- Hard working within a team and acting in accordance with the company's Mission, Vision and Value
- Respect team work and dealing with staff, customers, suppliers and third party at all levels
- Passion and drive to deliver, "can do" attitude
- Global collaboration mind
- Professional and Positive mind

Desirable

- Some Engineering work experience
- Foreign Language skills – e.g. Japanese, German, etc.
- Strong motivation to learn Japanese

  * Although this position allows you to work in English in short and midterm carrer, fluency in Japanese will be a great advantage in your long term career at Hitachi.

Appendix:

Title: Amorphas motor for screw-type air compressor
Description / Outline:
URL: https://www.hitachi.co.jp/New/cnews/month/2017/02/0213.html

Title: High voltage and high power inverter for EV power-train
Description / Outline:
URL: https://www.hitachi.co.jp/New/cnews/month/2019/10/1018.html

Title: Monitoring technology for Motor drive system by using motor control knowledge
Description / Outline:
URL: https://www.hitachi.co.jp/New/cnews/month/2018/06/0626.html

Title: High-speed train "Class 800" for UK
Description / Outline:
URL: https://www.hitachi.co.jp/New/cnews/month/2019/05/0523.html

Job Title	Researcher (Energy Conversion Electronics Research Department)
Keywords	Sensing device, Photonic crystal, Optical detector, Ion-control device, High environmental-endurance, Semiconductor process,
Responsible for:	Electrifications Innovation Center
Job Function:	Research and development of sensor devices / solutions

Main Responsibilities

With the advancement of digitalization, sensors for acquiring data have become an important system component in all business fields. Hitachi can offer a candidate an exciting career with many opportunities for personal development within a global and diverse team based in Japan to accelerate development of new semiconductor devices that visualize and digitize things that were previously invisible.

Hitachi can offer a candidate an exciting career with many opportunities for personal development within a global and diverse team based in Japan to accelerate the implementation of the electrification system in a society with us to improve our life better.

The role on offer will contain the following research topics;
1) Research on photonic crystal device
 Device design/evaluation/analysis of new devices using photonic crystal, and develop solutions characterized by the devices.
2) Research on optical detector
 Optical detector fabricated by using semiconductor process, especially X-ray and infrared ray. And that with downsize, Low cost, and high sensibility.
3) Research in ion-control device
 Semiconductor devices which can detect various gases and generate electric power by controling ion flow.
4) Research on high environmental-endurance devices
 Semiconductor devices with high environmental-endurance against temperature, humidity, and radiation.

As part of the role, the candidate will need to be able to;
- Ensure the research activities closely working with Business Unit engineering team for their project
- Effective cooperation to satisfy internal stakeholders (Project Management, Engineering Team in Business Unit), and all the external stakeholders to achieve team goals.
- Proactive and academic approach is required to keep up with the latest standards and market trend globally.
- Activities of presentation at academic conferences and patent creation are also required.
- Support the respective Project Manager to establish a strategic proactive development plan to ensure future proof design to support growth of company.
- Cooperative working and support each other with the other research team members to challenge and solve issues or to improve efficiency for future company growth, and based on Hitachi Values (Harmony, Sincerity and Pioneering Spirit).
- Attend the industry events/conferences/meetings arranged by department, R&D division etc., making presentation if necessary to support local society development.

Job Skills, Experience and Qualifications

Essential

Skills / Experience

- Experiences of device design, evaluation, and analysis
- Knowledge of semiconductor fabrication process
- Experiences of presentation at academic conference or paper submission
- Communication, presentation, and reporting skill of being able to complete a technical project whilst working effectively with other team members.
- Activeness of working 'out of the comfort zone' and overcoming challenges.
- Activeness of obtaining a new skill and being effective with that skill.
- Flexible and positive thinking.

Licences / Competences

- Preferably a driver's license

Qualifications

- Physics, Electronics, Condensed matter physics, Photonics, Master degree or Ph-D

Behavioural

- Hard working within a team and acting in accordance with the company's Mission, Vision and Value
- Respect team work and dealing with staff, customers, suppliers and third party at all levels
- Passion and drive to deliver, "can do" attitude
- Global collaboration mind
- Professional and Positive mind

Desirable

- Programming skills
- Japanese coversation skills
- Strong motivation to learn Japanese
  * Although this position allows you to work in English in short and midterm carrer, fluency in Japanese will be a great advantage in your long term career at Hitachi.

Appendix:

Title: FET-type hydrogen sensor with short response time and high drift immunity
Publication: Symp. on VLSI Technol., pp. T106-T107 (2017)

Title: The performance of operational amplifiers consisting of 4H-SiC CMOS after gamma irradiation
Publication: IEEE Trans. Electron Devices, vol. 67, no. 1, pp. 224-229, Jan. 2020

Title: A Pt–Ti–O gate Si-metal-insulator-semiconductor field-effect transistor hydrogen gas sensor
URL: https://doi.org/10.1063/1.3483942

Title: Capacitive micromachined ultrasonic transducer with driving voltage over 100 V and vibration durability over 1011 cycles
URL: https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=5285588

Job Title	Researcher (Home appliances and home-solutions to realize environmental value and Well-being)
Keywords	Thermal system, Fluid dynamics, Fluid machine, Acoustic engineering, Vibration Engineering
Responsible for:	Electrifications Innovation Center
Job Function:	Research and development of thermal dynamics/fluid dynamics/ fluid machine /noise&vibration for home appliance etc.

Main Responsibilities

Hitachi is developing home appliances which are applied the technology of thermal engineering, the fluid machine, and the vibration engineering for supports human life.For solving diversified life issues and creating environmental value, we need some people who work together with us to implement products functions and efficiencies through technological progress and service solutions to improve our life.

The role on offer will contain the following research topics;
- Research and development on thermal system / heat pump system
  Research and development on technologies for improving efficiency of heat pump system and cooling systems (refrigerators, air to water)

-Research and development on fluid machine
 Research and development on technologies for down-sizing and/or improving efficiency of fans and reducing fluid loss for vacuum cleaners and washer/dryers

-Research and development on low vibration technology
 Research and development on the low vibration structure and vibration analysis for motor application products (ex. washer/dryers)

As part of the role, the candidate will need to be able to;
- Ensure the research activities closely working with Business Unit engineering team for their project
- Effective cooperation to satisfy internal stakeholders (Project Management, Engineering Team in Business Unit), and all the external stakeholders to achieve team goals.
- Proactive and academic approach is required to keep up with the latest standards and market trend globally.
- Support the respective Project Manager to establish a strategic proactive development plan to ensure future proof design to support growth of company.
- Cooperative working and support each other with the other research team members to challenge and solve issues or to improve efficiency for future company growth, and based on Hitachi Values (Harmony, Sincerity and Pioneering Spirit).
- Attend the industry events/conferences/meetings arranged by department, R&D division etc., making presentation if necessary to support local society development.

Job Skills, Experience and Qualifications

Essential

Skills / Experience

- Mechanical engineering
- Japanese Language skills (business level)
- Development experience of experimental system / product related with mechanical engineering
- Demonstration of being able to complete a technical project whilst working effectively with other team members
- Demonstration of working 'out of the comfort zone' and overcoming challenges
- Demonstration of obtaining a new skill and being effective with that skill
- Having excellent communication and negotiation skills
- Showing commitment to an organization or cause
- Flexible and positive thinking

Licences / Competences

- Preferably a driver's license

Qualifications

- Mechanical engineering, Master degree or Ph-D

Behavioural

- Hard working within a team and acting in accordance with the company's Mission, Vision and Value
- Respect team work and dealing with staff, customers, suppliers and third party at all levels
- Passion and drive to deliver, "can do" attitude
- Global collaboration mind
- Professional and Positive mind

Desirable

- Some Engineering work experience

Appendix:

Title: Development of Home Appliances for Better QoL through Customization, Automation, and Ease-of-use

URL: Hitachi Review

https://www.hitachi.com/rev/archive/2020/r2020_01/01a03/index.html

Job Title	Researcher (Technology development for O&M automation using AI and data science)
Keywords	Data analytics, Process control by AI, Process engineering, Knowledge digitization, Maintenance optimization
Responsible for:	Controls and Robotics Innovation Center
Job Function:	Research and development of O&M technologies for energy/industry

Main Responsibilities

Our department focuses on the research and development of O&M automation for energy and industry field to realize Society5.0 by reduction of the human-workload, safety and efficiency improvement, and environmental protection. Hitachi can offer a candidate an exciting career with many opportunities for personal development within a global and diverse team based in Japan to accelerate the implementation of the O&M solution in a society with us to improve our life better.

The role on offer will contain the following research topics;
1) Process control
Research of automatic control of industrial plants using AI such as reinforcement learning and deep learning
2) Plant condition diagnosis
Predictive anomaly detection using sensor data clustering technology and physical model-based condition diagnosis technology
3) Asset Management
Research of advanced maintenance design technology for asset maintenance planning and asset life cycle optimization
4) Knowledge-Based Maintenance
Research on advanced maintenance work using asset knowledge represented by equipment failure causality such asProcess control

As part of the role, the candidate will need to be able to;
- Ensure the research activities closely working with Business Unit engineering team for their project
- Effective cooperation to satisfy internal stakeholders (Project Management, Engineering Team in Business Unit), and all the external stakeholders to achieve team goals.
- Proactive and academic approach is required to keep up with the latest standards and market trend globally.
- Support the respective Project Manager to establish a strategic proactive development plan to ensure future proof design to support growth of company.
- Cooperative working and support each other with the other research team members to challenge and solve issues or to improve efficiency for future company growth, and based on Hitachi Values (Harmony, Sincerity and Pioneering Spirit).
- Attend the industry events/conferences/meetings arranged by department, R&D division etc., making presentation if necessary to support local society development.

Job Skills, Experience and Qualifications

Essential

Skills / Experience

- Programming (C, C++, MATLAB/Simulink, Python)
- Software development experience using advanced theories such as machine learning, mathematical optimization, Bayesian networks, and natural language processing
- Development experience of control system for mobility/machine/plant (software / hardware)
- Demonstration of being able to complete a technical project whilst working effectively with other team members
- Demonstration of working 'out of the comfort zone' and overcoming challenges
- Demonstration of obtaining a new skill and being effective with that skill
- Having excellent communication and negotiation skills
- Showing commitment to an organization or cause
- Flexible and positive thinking

Licences / Competences

- Preferably a driver's license

Qualifications

- Mechanical, System control, Chemical engineering, Information engineering, Reliability engineering, Computer science, Master degree or Ph-D

Behavioural

- Hard working within a team and acting in accordance with the company's Mission, Vision and Value
- Respect team work and dealing with staff, customers, suppliers and third party at all levels
- Passion and drive to deliver, "can do" attitude
- Global collaboration mind
- Professional and Positive mind

Desirable

- Experience in research and development related to equipment predictive diagnosis, RCM, maintenance planning, and asset management
- Process engineering work experience
- Foreign language skills – e.g. Japanese, etc.
- Strong motivation to learn Japanese

   * Although this position allows you to work in English in short and midterm carrer, fluency in Japanese will be a great advantage in your long term career at Hitachi.

Appendix:

Title: **Newly developed simulation technology supports resilience management**
Description / Outline:
Hitachi has developed a simulation technology for facilitating resilience management, which helps companies respond to changes in business environments and harness those transformations for growth. The technology provides quantitative assessments of the risks and effects of various strategies that management might consider in critical situations, thereby facilitating quick decision-making on organizational changes and investment options. To achieve that performance, the technology uses templates for worker models, business (task) models, solution models, and other models as simulation components (agents) and combines them in accordance with the appropriate management scenarios. This approach enables users to validate plans across a broad range of business fields in an intuitive, quantitative manner.
URL: https://www.hitachi.com/rd/news/topics/2022/2203_rmn.html

Job Title	Researcher (Intelligent Robotics, Control technologies and Cyber Physical System R&D applied for industrial and transportation system)
Keywords	System control (Model Predictive Control, Robust Control) , Robotics (Motion control, Image Processing) , Simulation and Modelling for Digital Twin(Agent simulation) ,Industrial Products (Critical Dimension-Scanning Electron Microscope, Biochemistry Analyzer, Elevator, Crane, Depalletizing Robot)
Responsible for:	Controls and Robotics Innovation Center
Job Function:	Research and development of control tech.

Main Responsibilities

Robotics Depart. focuses on the research and development of Industrial Products/Robotics/3D Sensing to realize Society5.0 by reduction of the human-workload, safety and efficiency improvement, and environmental protection. Hitachi can offer a candidate an exciting career with many opportunities for personal development within a global and diverse team based in Japan to accelerate the implementation of the control system.

The role on offer will contain the following research topics;
・System Control for Industrial Products
  - Development of control design and implementation for industrial products such as logistics automation system and elevators

・Advanced System Control for Industrial / Field robots
  - Autonomous motion control, Integrated vision recognition, Self-position estimation (SLAM, etc.), ROS (Robot Operating System), Simulation (Gazebo, etc.), Model prediction control, etc.

・Cyber Physical System Simulation
  - Agent simulation, Operation and maintenance using operational technology and AI

As part of the role, the candidate will need to be able to;
- Ensure the research activities closely working with Business Unit engineering team for their project
- Effective cooperation to satisfy internal stakeholders (Project Management, Engineering Team in Business Unit), and all the external stakeholders to achieve team goals.
- Proactive and academic approach is required to keep up with the latest standards and market trend globally.
- Cooperative working and support each other with the other research team members to challenge and solve issues or to improve efficiency for future company growth, and based on Hitachi Values (Harmony, Sincerity and Pioneering Spirit).
- Attend the industry events/conferences/meetings arranged by department, R&D division etc., making presentation if necessary to support local society development.

Job Skills, Experience and Qualifications

Essential

Skills / Experience

- Programming (C, C++, MATLAB/Simulink, Python)
- Development experience of control system for mobility/machine (software / hardware)
- Demonstration of being able to complete a technical project whilst working effectively with other team members
- Demonstration of working 'out of the comfort zone' and overcoming challenges
- Demonstration of obtaining a new skill and being effective with that skill
- Having excellent communication and negotiation skills
- Flexible and positive thinking

Licences / Competences

- Preferably a driver's license

Qualifications

- Mechanical, System control, Electronic information, Information engineering, Master degree or Ph-D

Behavioural

- Hard working within a team and acting in accordance with the company's Mission, Vision and Value
- Respect team work and dealing with staff, customers, suppliers and third party at all levels
- Passion and drive to deliver, "can do" attitude
- Global collaboration mind
- Professional and Positive mind

Desirable

- ROS (Robot Operating System) Programming skills
- Foreign Language skills – e.g. Japanese, German, etc.
- Strong motivation to learn Japanese
   * Although this position allows you to work in English in short and midterm carrer, fluency in Japanese will be a great advantage in your long term career at Hitachi.

Appendix:

[Research Topics]
Research Area
Robotics : Research & Development : Hitachi
https://www.hitachi.com/rd/research/mechanical/robotics/index.html

System Control Technology Development for Quick Layout Changes of Goods Sorting Lines at Warehouses and Other Logistics Facilities
https://www.hitachi.com/rd/news/topics/2022/2204_qlc.html

Hitachi Develops Deep Learning-Based Robot Control Technology Adapted to Handling Objects with Variable Shapes
https://www.hitachi.com/rd/news/topics/2021/2109_dbr.html

Field Robotics Bringing Innovation to Digital Solutions for Field Work
https://www.hitachi.com/rev/archive/2021/r2021_04/04b06/index.html

Multiple AI Coordination Control Developed in Collaboration with University of Edinburgh
https://www.hitachi.com/rd/sc/story/ai_coordination/index.html

[Publishing Academic Papers]
Hiroshi Ito, Kenjiro Yamamoto, Hiroki Mori, Tetsuya Ogata, "Efficient multitask learning with an embodied predictive model for door opening and entry with whole-body control", Science Robotics, 6 April 2022, Vol 7, Issue 65

Ito,H. , et al.; Sensory-Motor Learning for Simultaneous Control of Motion and Force: Generating Rubbing Motion for Uneven Object, International Symposium on System Integration (SII 2022)

Y.Andre, et al.; A Peg-in-hole Task Strategy for Holes in Concrete(ICRA2021)

Job Title	Specialist IT Architect and IT support
Keywords	
Responsible for:	Production & Information Systems Engineering Dept.
Job Function:	IT services for Omika Works and Overseas Affiliated Companies

Main Responsibilities

Our department belongs to Omika Works located in Ibaraki prefecture, Japan. We provide IT services for Omika Works, such as IT infrastructure, business applications, IT security and IT governance. We are looking for talented graduates to improve the overall IT services. Our department provides a friendly, open-minded, multicultural working environment. We also provide training and a complete career growth path.

We offer a wide range of IT services, so your duties might vary depending on the situation and skills. We welcome all kinds of talents; however, to fulfil the following tasks are highly expected.

1. IT Security and IT Governance
Improve the IT security and IT governance processes in Omika Works. The task includes the network environment developments and software managements. Take Cyber Security into account, manage the installed software in assorted devices.

2. Application System and Infrastructures Developments
The task includes system developments in Omika works, such as financial systems, production management systems, manufacturing execution systems and the data management systems.

3. IT Services for Overseas Affiliated Companies
Our department has overseas affiliated companies in China and UK. Thus, English speaking skill is essential, and Mandarin is desirable. The task includes supporting the companies to compliance with personal information protection laws and regulations in each country.

4. IT Support for Non-Japanese Speaker Employees in Omika Works
Our department need to provide IT services for non-Japanese speaker employees. We need you to be familiar with our IT policies and support the non-Japanese speakers. We want to improve our workplace that Japanese speakers and English speakers could efficiently work together. This task is to take part in the establishing of multicultural environment.

As part of the role, the candidate will need to be able to;
- Cooperate with colleagues in the IT team to successfully implement projects.
- Keep up with the cutting-edge IT skills, trends and global personal information protection laws with a proactive attitude and academic approach.
- Support with the IT governance and improve the processes.
- Solve issues and improve efficiencies for the future growth of our company, based on the Hitachi Values (Harmony, Sincerity and Pioneering Spirit).
- Understand the Hitachi Group rules and present to the overseas affiliated companies.

Job Skills, Experience and Qualifications

Essential

Skills / Experience

- Basic knowledge of network and cyber security
- Basic knowledge of TCP / IP
- Programming language skills   (VB.NET, ASP.NET, Oracle procedure, JAVA, VC.NET)
- Database skills (Oracle, PostgreSQL)
- Daily Conversational Japanese speaking skills or a strong desire to learn Japanese

Qualifications

 - Degree : Bachelor ,Master
 - Major : Computer Science, Electrical Engineering, Software Engineering, Information technology, Cyber Security, Artificial Intelligence, Information Engineering, Information Systems, Management Engineering

Behavioural

- Hard working; team player; work in accordance with the company's Mission, Vision and Value
- Respect teamwork; cooperate and communicate with staff, customers, suppliers and third party at all levels
- Passion and motivation to deliver; the "can do" attitude.
- International cooperation attitude

Desirable

- Mandarin Speaking Skills
- Knowledge of information protection regulations such as GDPR and China Cyber Security Law
- Advanced security technologies knowledge such as Zero Trust NW
- Familiar with Clouds, such as Azure, AWS.

Appendix:

Title: Introduction of Omika Works

Description / Outline: Omika Works is certified as WEF "Lighthouse"

URL: www.hitachi.com/products/it/control_sys/omika/index.html

Title: Introduction Factory Simulator Project

Description / Outline: The explanation and process of the factory simulator project. The article only provides Japanese.

URL: https://www.hitachi.co.jp/products/it/lumada/solution/lumada_s_010040.html

Job Title	System engineer who makes full use of Hitachi's IT technology to lead the social innovation business globally
Keywords	Problem solving by combining products/services/solutions, IoT platform, Repository, DevSecOps, CI/CD, Data operation automation
Responsible for:	Applications Services Division Lumada Solution Hub Business Promotion Center
Job Function:	Create and promote business of Lumada Solution Hub, a platform creating new value together with partners globally.

Main Responsibilities

Lumada Solution Hub provides proven solutions and know-how that Hitachi has cultivated together with partners across industries and companies. In addition to developing solutions to social, market, and customer issues, we will be on the front line of "co-creation with customers", sharing issues and visions with customers and creating new businesses together.

 The role on offer will contain the following responsibilities;
● Global business development
 - Co-working with global team and teams of other department, countries, companies to develop global business.
● Engineering
 - Create a platform that solves customer issues by combining assets using the latest technologies.
● Business expansion by supporting front business
 - Support front-line businesses and contribute to business expansion through comprehensive proposal planning from platform foundations to growth areas such as cloud and digital, and project creation through digital marketing.
● Creating the core of digital solutions
 - Create the core of digital solutions using the latest technology, propose and commercialize new IT service businesses that support Hitachi's Social Innovation Business.
● Leading the digital transformation
 - Lead the digital transformation of Hitachi's IT sector, through the planning and support of IT infrastructure and business systems for system engineers, design and development departments in the SI business and server / storage business, and employees in all other staff departments, management and Contribute to the business and the entire group.

As part of the role, the candidate will need to be able to;
 - Cooperate with global teams and members with different values and cultures.
 - Actively demonstrate leadership to people of team, other departments, divisions, and company.
 - Logically organize your thoughts and explain them to others without hesitation.
 - Work closely with clients and Hitachi internal members to understand the client's need accurately and define the system's requirement.
 - Proactive and academic approach to keep up with the latest standards and market trend globally.

Job Skills, Experience and Qualifications

Essential

Skills / Experience

- Language skill – Business level English(Have a strong desire to learn Japanese for communication in business)
- Flexible and positive thinking
- Leadership
- Basic knowledge of the IT field

Licences / Competences

None

Qualifications

Bachelor, Master or Ph-D

Any major

Behavioural

- Global and open-minded communication
- Leadership involving people without hesitation
- A person who can clearly express their thoughts regardless of language
- Logical thinking and communication ability
- Able to respond flexibly to changes in the environment and situations

Desirable

- Global team working or experience of other culture
- Language skill – Communication level Japanese
- Programing skills
- Exprience of using cloud services and SaaS such as AWS, Azure, GitHub, JFrog, Zuora, Openshift etc.
- Experience of development or research in any programing languages.

Appendix:

Title:Lumada Solution Hub
Description / Outline: A platform that creates new value to realize digital innovation together with partners.
URL: https://www.hitachi.co.jp/products/it/lumada/about/lumada_hub/index.html

Title:Lumada
Description / Outline: Transforming society through digital innovation
URL: https://www.hitachi.com/products/it/lumada/global/en/index.html

Title: INFORMATION & COMMUNICATION TECHNOLOGY SOLUTION
Description / Outline:Business and job description of Information & Communication Technology Solution in Hitachi Ltd..
URL: https://www.hitachi.co.jp/recruit/en/newgraduate/jm-navi/ict/