

VinJ 2020-2021 Host Company List

| reference code | company | Applicant's number | Host section | Theme of internship | Details of Internship | Specialization of the students | Level of students | Language level | Country | Gender | Accommodation (tentative) | Others |
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| 1 | Hitachi Chemical Co., Ltd. | 3 | Advanced Technology R&D Center | R&D of Organic, Inorganic or Composite Materials | Students will participate in a development of organic, inorganic or composite materials such as for electronic devices. They will propose a material design policy for performance improvement. They will develop new evaluation method or will propose a material design policy for performance improvement. | <Necessary> Basics in Chemistry <Recommended> Experience in Synthesis or Characterization of Organic, Inorganic or Composite Materials | M or D | English: Business level (Technical communication) Japanese: Not required | | | Company-rented apartment building in Tsukuba, Hitachi, Chikusei (Ibaraki-Prefecture), or Fukaya (Saitama-Prefecture) Nearest station: Tsukuba-station of Tsukuba Express line in Tsukuba, Hitachi-station of JR Joban line in Hitachi, Kawashima-station of JR Mito line in Chikusei, Okabe-station of JR Takasaki line in Fukaya | |
| 2 | Hitachi Chemical Co., Ltd. | 1 | Advanced Technology R&D Center | R&D of Battery Materials | A student will participate in a development of materials such as for Li ion battery or solid-state battery. He / She will develop new evaluation method, or design and analyze materials suitable for battery etc., and will propose a material design policy for performance improvement. | <Necessary> Basics in Chemistry <Recommended> Experience in Synthesis or Characterization of Battery Materials | M or D | English: Business level (Technical communication) Japanese: Not required | | | Company-rented apartment building in Tsukuba, Hitachi, Chikusei (Ibaraki-Prefecture), or Fukaya (Saitama-Prefecture) Nearest station: Tsukuba-station of Tsukuba Express line in Tsukuba, Hitachi-station of JR Joban line in Hitachi, Kawashima-station of JR Mito line in Chikusei, Okabe-station of JR Takasaki line in Fukaya | |
| 3 | Hitachi Chemical Co., Ltd. | 1 | Advanced Technology R&D Center | R&D of Simulation Technology of Material Function | A student will participate in an analysis of a reaction mechanism, a structure, or surface condition of polymer materials and organic-inorganic composite materials by using some ICT tools such as molecular calculation software and so on. Based on analysis results, he / she will propose a material design policy for performance improvement. | <Necessary> Basics in Chemistry <Recommended> Experience in Computational Chemistry | M or D | English: Business level (Technical communication) Japanese: Not required | | | Company-rented apartment building in Tsukuba, Hitachi, Chikusei (Ibaraki-Prefecture), or Fukaya (Saitama-Prefecture) Nearest station: Tsukuba-station of Tsukuba Express line in Tsukuba, Hitachi-station of JR Joban line in Hitachi, Kawashima-station of JR Mito line in Chikusei, Okabe-station of JR Takasaki line in Fukaya | |
| 4 | Hitachi Chemical Co., Ltd. | 1 | Advanced Technology R&D Center | R&D of Synthetic Biology or Biomaterials | A student will participate in a research of synthetic biology or development of biomaterials. He / She will propose a synthetic method or will develop new biomaterials. | <Necessary> Basics in Biochemistry <Recommended> Experience in Synthetic Biology | M or D | English: Business level (Technical communication) Japanese: Not required | | | Company-rented apartment building in Tsukuba, Hitachi, Chikusei (Ibaraki-Prefecture), or Fukaya (Saitama-Prefecture) Nearest station: Tsukuba-station of Tsukuba Express line in Tsukuba, Hitachi-station of JR Joban line in Hitachi, Kawashima-station of JR Mito line in Chikusei, Okabe-station of JR Takasaki line in Fukaya | |
| 5 | Pretia Technologies, Inc. | 1 | R&D Department | Research and development of SLAM algorithm which works on cloud for mobile applications (AR Cloud) | Who We Are We're a series-A-stage AR startup based in Tokyo, working at the forefront of next-generation software infrastructure to create a whole new gaming experience in the tangible world. Founded by then-students at the University of Tokyo, our team is now composed of passionate young talents originating from various countries, all believing in the tremendous power of bringing people together beyond devices. Stating "Empower Collaborative Achievement" as our mission, we're determined to become a world-class leading company in this emerging field of AR. Corporate website: - http://www.pretia.co.jp/ Media coverage: - https://forbesjapan.com/articles/detail/28721 - https://jp.techcrunch.com/2019/07/25/pretia-fund-raising-2/ - https://jp.techcrunch.com/2018/10/04/pretia-fund-raising/ - https://jp.techcrunch.com/2019/01/30/pretia-sarah-ver2/ - https://thebridge.jp/2018/07/pretia-to-launch-sarah-arpuzzle Press release: - https://prtimes.jp/main/html/rd/p/00000001.000035730.html - https://prtimes.jp/main/html/rd/p/00000002.000035730.html - https://prtimes.jp/main/html/rd/p/00000006.000035730.html What We Do Augmented World Game We're creating real-world game services using AR technology, encouraging players to interact with their surroundings in a way they have never done before. These consist of various elements including movement, exploration, puzzle solving and role playing to name just a few. The very first series of our game is named AR Puzzle Game "Sarah and the Hacker" | Academic Background Computer Science / Engineering, Mathematics, Physics *Basically, any candidate who has a quantitative background and some computed related experience is welcomed. Required Knowledge and Experiences Since the tasks we have on our side are various and different in nature, we're offering four different positions as follows: 1) Computer Vision App Developer, 2) Cloud App Developer, 3) Computer Vision Researcher and 4) Generic Project. A successful candidate will take on a role depending on their background and maturity. Regardless of which position candidates wish to take, he/she must be familiar with... • Computer Vision: o Basic understanding required in · Multiview Geometry (i.e. Essential and Fundamental Matrix Homography Estimation) · Visual Odometry (2D-2D, 3D-2D, 3D-3D) o Nice to have · Visual Place Recognition o Bonus · 3D Reconstruction · Mapping • Machine Learning and Deep Learning | U or M or D | English: Business level Japanese: Not required | | | Near Ochanomizu Station | |
| 6 | Square-enix | 1 | Advanced Technology Division | Research and Development (R&D) for video games | A number of different specialties are required to develop the necessary features of a AAA video game: Computer Graphics, Animation, Artificial Intelligence, Tools, etc... Depending on the skills and motivation of the candidate, an internship subject will be selected from these disciplines. Whatever the chosen discipline is, the candidate will be required to learn about video game engine architecture and examine the state of art of the discipline. He or she will first have to prototype, test, debug and optimize new algorithms and systems and then bring them to maturity, so they can be used in an actual production. Communication with engineers and artists of different backgrounds will be necessary to fulfill that mission. | Engineers and Technical Artists welcome. · in the case of engineers: background in Information Technology, Computer Science, Artificial Intelligence or Computer Graphics . Solid basis in C++ and math are preferred. · in the case of technical artists: strong knowledge of modern game workflows and techniques preferred (e.g. Maya, Houdini, simulation, rigging, etc.) | M or D | No strong requirement on language ability. However the higher the level in English and Japanese, the better. | | | Near Shinjyuku or Higashi Shinjyuku Station | |

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| 7 | Advanet Inc. | 2 | IoT Business Solutions | Be involved in supporting the product design and development team in M2M / embedded technology / HPC / cloud integration. | Support the design and development of technologies and solutions for embedded applications, including HPC; support the development of underlying software and cloud integration; Work on the design of embedded hardware, wired and wireless connectivity solutions, middleware software development and M2M platform for data connectivity over the Cloud; Contribute to improving future M2M Cloud platforms to support the integration of Devices as a Solution (DaaS); | * Degree in telecommunications and/or electronics engineering in the context of embedded systems, devices and sensors, with knowledge of both hardware and software; * Educational background in the design of Machine to Machine (M2M) solutions and integration, or High Performance Computing; * Desired practical project experience involving Internet of Things (IoT), HPC and/or Cloud-based deployment and processing; | M | Fluency in English a must; communication skills in Japanese a plus | | | Daitabashi Station, Keio Line | |
| 8 | NTT Media Intelligence Laboratories | 1 | Social Knowledge Processing Project / Collective Intelligence Technology Group | Analyze personal data such as mail and chat logs, and examine methods for extracting common knowledge and personal knowledge. Examine how to use the extracted knowledge. | Analyzing the tendency of personal knowledge based on emails and chat logs written by Japanese Examination of methods to extract personality and collective intelligence, implementation, evaluation | Natural Language Processing, Data Analysis, Machine Learning a candidate who can handle the theme written in "2(4)Detail of Internship" is preferred | U or M | No problem with daily conversation in Japanese. No problem to read Japanese. English is not required. | | | Near Yokosuka Chuo Station | |
| 9 | Mitsubishi Materials Corp | 2 | Smart Factory Promotion Center | Apply image processing and AI for product inspection | Use image processing technologies and AI to detect product quality issues and relate them to manufacturing process parameters for quality improvement. | Data science, AI with basic understanding of mechanical engineering. Programming skills (C++, Python), computer vision (e.g. Halcon, open-cv), data analytics (e.g. SQL-databases, spotfire; at least good Excel-engineering level) and basics in measurement technologies and control systems, would be appreciated. | M or D | English essential Basics in Japanese welcome | | | Near Saitama Shin Toshin Station | |
| 10 | Goldman Sachs Japan | 4 | Engineering | Successful candidates will work in one of multiple Engineering teams in Goldman Sachs Japan office, either on Technology Infrastructure, Technology Application Development, or Securities Strategist side. | Exact details of internship will depend on specific team accepting the candidate, which will be decided based on candidate skills, preferences and team requirements. In Technology application development teams, interns will have opportunity to work on developing business applications used by business users in areas like Security Trading, Compliance, Operations, Asset Management etc. In Technology Infrastructure teams interns will work on backend technologies supporting our infrastructure, including areas like Linux or Windows administration, Dynamic Compute (Cloud Computing platform), Data Mining or Web/Mobile framework development. Some technologies used in our teams are: Java, C#.NET, C++, Perl, Python, Scala, Messaging (JMS, RV, Kafka), JavaScript, Angular, React, HTML5, Spring, Relational Databases, Non-relational Databases (Hadoop, Mongo DB, Elastic Search etc), SecDB (internal database and programming language), Reladomo/Mithra (open source ORM framework released by GS), Eclipse Collections, PURE (data modelling) etc. Securities Strategist teams work closely with corresponding trading desk, to identify trading opportunities and improve workflow efficiency through analysis and automation. In Securities Strategist teams, interns will have opportunity to work as desk strategist in areas such as algorithmic trading, macro trading, and structured product, and learn technical skills of SecDB (firm's proprietary programming language). In algorithm trading team, interns will have exposure to development and research of trading algorithms and learn core skills such as market microstructure, trading methodology, and apply those to execution algorithms. In macro trading team, interns will have exposure to firm's proprietary software for risk and pricing analytics of complex financial products, and work on projects such as pricing model improvements, capital usage optimization and systematic analysis of client flows with data science. In structured product team, interns will have exposure to pricing and models for traded products, and risk management of derivatives, and also learn about relevant trading system, tools, and try to optimize efficiency of the same. As part of gaining experience with software development, the interns will be able to learn about finance and business - how various lines of business work, what are different kinds of financial products and how they are used to bring profits to our Firm and its clients, how financial companies interact with markets, clients and regulators, and how exactly the technology is used to make all of that run smoothly and efficiently. <u>In Goldman Sachs we work very closely with our counterparts across the globe – in Singapore, Hong Kong, India.</u> | Any engineering-type field, preferably one of Computer Science, Mathematics, Physics, Engineering Students that have some of the skills listed in the internship details (e.g. Java, C#.NET, C++, Perl, Python, Scala, Messaging (JMS, RV, Kafka), JavaScript, AngularJS/ React etc.) | U or M or D | English Essential Japanese Optional | | | Around Roppongi or Azabu-Juban Station | |
| 11 | NTT Communication Science Laboratories | 1 | Recognition Research Group Media Information Laboratory NTT Communication Science Laboratories | Cyclic learning of speech recognition and synthesis systems | To obtain accurate speech recognition systems and high-quality speech synthesis systems, we typically need a large amount of reliable speech corpora. However, collecting such data usually requires a painstaking process of manual labeling with careful prescreening. To automate this process, we consider formulating the problems of training speech recognition and synthesis systems as a unified cyclic training problem so that training each of these systems can improve the other. This internship will provide an opportunity to develop skills and gain experience of formulating and implementing machine learning (deep learning) techniques that make it possible to develop a unified system of speech recognition and speech synthesis systems. | Image processing, audio signal processing, machine learning (deep learning), in particular basics of deep generative models and sequence-to-sequence models | U or M or D | English essential/ survival Japanese | | | Near Hon-Atsugi station | |
| 12 | NTT Communication Science Laboratories | 1 | Recognition Research Group Media Information Laboratory NTT Communication Science Laboratories | Crossmodal speech and image generation | Humans are able to imagine a person's voice from the person's appearance and imagine the person's appearance from his/her voice. This may indicate the possibility of being a certain correlation between voices and appearance. Here, an interesting question is whether it is technically possible to predict the voice of a person only from an image of his/her face and predict a person's face only from his/her voice. We investigate a method that aims to convert speech into a voice that matches an input face image and generate a face image that matches the voice of the input speech by leveraging the underlying correlation between faces and voices. This internship will provide an opportunity to develop skills and gain experience of formulating and implementing machine learning (deep learning) techniques that make it possible to develop a crossmodal speech and image generation system. | Image processing, audio signal processing, machine learning (deep learning), in particular, basics of deep generative models including Variational Autoencoder (VAE), Generative Adversarial Network (GAN) and Glow | M or D | English essential/ survival Japanese | | | Near Hon-Atsugi or Aikoh-Ishida station | |
| 13 | NTT Communication Science Laboratories | 1 | NTT Communication Science Laboratories, Media Information Laboratory, Signal Processing Research Group | Research on next generation AI technologies for understanding human conversation | We are pursuing research on technologies to understand human speech in everyday environments. We combine signal processing and deep learning to tackle problems that have not been solved before. For example, we have recently developed new technologies for extracting a target speaker voice masked by the voice of other speakers. (https://www.ntt.co.jp/news2018/1805e/180528a.html). The internship will consist in research in state-of-the-art approaches for deep learning-based speech processing for understanding human natural conversations. The intern will first learn about state-of-the-art speech processing, implement a recent approach (using e.g. Python), and run experiments to confirm its effectiveness. The intern will then pursue innovative research based on these preliminary experiments. For ambitious students, the intern may write a scientific conference paper to summarize his research at the end of the internship. | - The student should have some knowledge about deep learning or statistical signal processing and should be able to read and understand scientific publications in this field. - He/She should have some programming experience in python or C/C++, and preferably be able to use Linux machines. - Some notions of speech processing or automatic speech recognition or image processing would be preferable. - A student with interest in Japanese culture and language would be preferable. | M or D | Japanese: No particular requirement Good English speaking reading and writing skills for reading and discussing technical topics. | | | Near Kintetsu Nara Station | |
| 14 | NTT Communication Science Laboratories | 1 | Recognition Research Group, Media Information Laboratory NTT Communication Science Laboratories | Modeling Large-scale Image Search Algorithm by Deep Learning | Image search is a technique for finding similar images using a single image as a query. As a classic method, a vector of several hundred dimensions is extracted as an image feature from each image in the database, and the search results are obtained by neighborhood search in the vector space. However, there is still no technology that can instantly obtain search results from the very large-scale images database accumulated by widespread use of social media. Then, is it possible to use AI (deep learning) to achieve neighborhood search at a high speed, which has been the most time consuming in previous large-scale image search? We are working on the creation of high-speed and accurate search technology for videos and images. The recruited student will participate in this project and engage in research and development of core elemental technologies. This is a great opportunity to hone your skills in modern image recognition and deep learning techniques. | Image recognition, image retrieval, machine learning, and deep learning | U or M or D | English ability is required. No requirement for Japanese. | | | Near Hon-Atsugi or Aikoh-Ishida station | |
| 15 | NTT Communication Science Laboratories | 1 | Recognition Research Group Media Information Laboratory NTT Communication Science Laboratories | Nonparallel/Sequence-to-Sequence Voice Conversion based on Image/Language Processing | Recently, the advancements of deep learning bring down a wall between individual research areas, such as image processing, language processing, and signal processing. By incorporating techniques in different research areas, it is possible to obtain a new perspective and trigger a large breakthrough. Actually, inspired by image generation and language modeling, we have recently proposed non-parallel voice conversion and sequence-to-sequence voice conversion, respectively. In this internship, we aim to establish a new algorithm based on them and will verify the effectiveness of the proposed method through implementation and experiments. | Speech synthesis, voice conversion, image generation, machine translation, signal processing, and machine learning (deep learning), in particular, basics of deep generative models (e.g., GAN, VAE, and Flow) and data conversion (e.g., sequence-to-sequence conversion and non-parallel conversion). | U or M or D | Conversation will be in English. No requirement for Japanese level | | | Near Hon-Atsugi or Aikoh-Ishida station | |

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| 16 | NTT Communication Science Laboratories | 1 | Recognition Research Group Media Information Laboratory NTT Communication Science Laboratories | Deep Cross-modal Learning for Real-time Scene Understanding and Its Application to Robot Agent | We human beings develop deeper understanding of surrounding environments by bringing our senses together. We know what kind of sounds is likely to be generated by an object that we can see, and we can even infer what kind of objects exist in the scene by only hearing their sounds. For example, when we hear a barking sound, we can imagine the visual image of the dog somewhere nearby, even without turning our eyes to it. This may pose an interesting question -- Is it possible to equip a physical AI system with such a remarkable ability? We are interested in (1) developing a deep cross-modal learning technique that makes it possible to recognize objects in a scene based on not only visual information but also audio and other sensory signals; and (2) implementing an intelligent robot agent that can understand both semantic and geometric structure of its surrounding environment in real-time. The selected internship student will focus on conducting basic research and development of core algorithms for this. It will be a great opportunity to develop targeting human-to-human communications in face-to-face and/or telepresence setting, this intern program aims to | The ideal candidate is someone who specializes in, but not limited to, image recognition, audio signal processing, robotics, or machine learning (deep learning) and can work on the job described below in "Sec. 2 (4) Details of Internship." | M or D | Conversation will be in English. No requirement for Japanese level | | | Near Hon-Atsugi or Aikoh-Ishida station | |
| 17 | NTT Communication Science Laboratories | 1 | Human Information Science Laboratory, NTT Communication Science Laboratories | Computational analysis of human communicative behaviors and multimodal nonverbal interactions | develop a new technologies for sensing /analyzing and modeling human communicative behaviors emerged in such situations. The targeting human behaviors include bodily motions, head gestures, facial expressions, gaze, prosody, and so. The goal is to analyze and understand the mechanism of multiparty interactions and/or individual emotional states, using mathematical models such as Bayesian networks and deep neural networks. The development of computational tools for analyzing and visualizing human behaviors is included in this theme. We put emphasis on the implementation aspect (e.g. programming). But, upon participant's interest and progress of the internship project, writing academic paper would be in the scope of the internship. This project is considered as a successor of past successful Vulcanus internships from 2006 to 2020. But, this is not just an extension of the past works. We aim to explore a new horizon jointly with a new intern. Our R&D environment is based on Windows 7/8/10, Linux Ubuntu, MS VisualStudio, Matlab, R, OpenCV, OpenGL. The programming skill with C/C++ and MATLAB is required. In addition, it would be welcome if you had some experiences of Python, R, Mathematica, Adobe Illustrator/Photoshop, MS Word/PowerPoint, Maya, and video editing tools. We especially welcome students who have interests/knowledge in one or some of areas including computer science, machine learning, deep neural network, signal processing, time-series analysis, computer vision, image processing, computer graphics, human-computer interaction, speech and audio processing, social signal processing, multimodal interaction, psychology, and social linguistics. | Computer Science, Machine Learning, Deep Neural Network, Computer Vision, Computer Graphics, Social Computing, Social Signal Processing, Human-Computer Interaction, Image Processing, Speech and Audio Processing, Signal Processing, Time-series analysis, Artificial Intelligence, Multimodal interaction, Social Psychology, Sociology, Social Computing, Cognitive Science, Social Linguistics Our R&D environment is based on Windows 7/8/10, Linux Ubuntu, MS VisualStudio, Matlab, R, OpenCV, OpenGL. The programming skill with C/C++ and MATLAB is required. In addition, it would be welcome if you had some experiences of Python, R, Mathematica, Adobe Illustrator/Photoshop, MS Word/PowerPoint, Maya, and video editing tools. We especially welcome students who have interests/knowledge in one or some of areas including computer science, machine learning, deep neural network, signal processing, time-series analysis, computer vision, image processing, computer graphics, human-computer interaction, speech and audio processing, social signal processing, multimodal interaction, psychology, and social linguistics. | U or M or D | English:Essential Japanese language ability: Not Required | | | Near Hon-Atsugi or Aikoh-Ishida station | |
| 18 | NTT Basic Research Laboratories | 1 | Material Science Laboratory, Thin-Film Materials Research Group | Improved performance of deep-ultraviolet optoelectronic devices | AlGaIn alloys have a direct band gap ranging from 3.4 eV for GaN to 6.0 eV for AlN, which corresponds to the wavelength region from 365 to 210 nm (Band gap increases as Al composition increases.) Deep-ultraviolet (DUV) optoelectronic devices are of great interest for applications such as sterilization, air freshener, and medical treatment. The DUV devices consist of donor and acceptor impurity-doped semiconductors. Because of the large ionization energy of the donor and acceptor in the n- and p-type AlGaIn with high Al content, the AlGaIn epilayers show lower doping efficiency, leading to the low carrier concentration in the AlGaIn with high-Al content. As a result, it is difficult to obtain the high-efficiency DUV devices with high-Al content. We will fabricate the DUV devices and investigate the optical and electrical properties of the devices to achieve the improvement of the DUV device performance. | Candidates preferably have basic knowledge of one of the following area; solid state physics, semiconductor physics, optical properties in materials, electrical engineering, or crystal growth. | M | English: essential, Japanese: the minimum required | | | Near Hon-Atsugi or Aikoh-Ishida station | |
| 19 | NTT Basic Research Laboratories | 1 | Material Science Laboratory, Thin-Film Materials Research Group | Characterization of next-generation semiconductor materials (boron nitride and diamond) | The target of this job is to characterize next-generation semiconductor materials (boron nitride and diamond) and analyze the experimental results. Boron nitride (BN) and diamond are promising semiconductor materials for high-efficiency power devices. This job offers opportunities to learn about such promising materials and skills to investigate physical properties of semiconductor materials, e.g., X-ray diffraction, FT-IR, atomic force microscope (AFM), scanning electron microscope (SEM), Hall-effect measurement. Research results are periodically discussed in meetings and the discussions in those meetings are good training for the study on material science. | Candidates preferably have basic knowledge of one of the following area; solid state physics, semiconductor physics, optical properties in materials, electrical engineering, or crystal growth. | U or M | English essential We don't care the Japanese level. | | | Near Hon-Atsugi or Aikoh-Ishida station | |
| 20 | NTT Basic Research Laboratories | 1 | Quantum Optical State Control Research Group | Information processing with networked optical oscillators | We have studied advanced information processing with physical system, and we have developed a large scale network of 2000 optical oscillators. In this internship, we will perform experiments by using this optical network for solving combinatorial optimization problems and simulating basic functions of artificial neural networks. | Physics: Ising spin model, magnetic phase transition Computer science: Combinatorial optimization problem, machine learning Optics: Laser, optical interference, nonlinear optics | M or D | English is essential. Japanese is not required | | | Near Hon-Atsugi or Aikoh-Ishida station | |
| 21 | NTT Basic Research Laboratories | 1 | Quantum Optical Physics Research Group | Electron spin manipulation in semiconductor nanostructures | The accepted student will join our research project on semiconductor spintronics, in which we aim at establishing novel principles and techniques of manipulating electron spins in semiconductor nanostructures. He or she will have a chance to experience a variety of experiments, including device design and fabrication, time- and spatially resolved optical measurements, ultra-low-temperature experiments, programming for measurements and analysis. It is also possible to experience numerical simulation to explain experimentally observed spin dynamics in solid state materials. | Candidates preferably have basic knowledge of one of the following area; solid state physics, semiconductor physics, quantum mechanics, optical properties in materials, electrical engineering. | M or D | English is essential. Japanese is not required. | | | Near Hon-Atsugi or Aikoh-Ishida station | |
| 22 | NTT Basic Research Laboratories | 1 | Photonic Nano-Structure Research Group | Electromagnetic designing and optical measurement of nanophotonics structures | NTT Corporation is now proposing IOWN concept, in which we will realize next generation innovative optical and wireless network, computing, and mobile devices by shifting from the world of electronics to the world of photonics. Our research team is recently focusing on ultra-small and ultra-low-power opto-electronic integrated nanophotonics as one of the key technologies of IOWN concept. In this job program, one of the main works are numerical simulation of nanophotonics structure dedicated for energyefficient opto-electronic device application. Another main work is experimental evaluation of nanophotonics structure/device. | The knowledge of electromagnetism is required. The background knowledges of quantum physics, optics, material science, and numerical simulation are desirable. You will use simulation software such as COMSOL Multiphysics. | U or M or D | English essential/ Survival Japanese | | | Near Hon-Atsugi or Aikoh-Ishida station | |
| 23 | NTT DATA CORPORATION | 1 | NTT DATA Corporation Software Engineering Center, Production Engineering Dept., System Engineering Headquarters. | PoC of cognitive assisted functions on low-code platform for higher productivity application development. * Proposal and prototype development of cognitive information based user assistance * Preliminary study of the market for solution global rollout | As the need for digital transformation increases, it is required to quickly deliver IT to business. Low-Code Platform (LCP) is one of the potential solutions which is recently gaining market attention. LCP is an environment that enables non-programmers (business experts) to develop applications through description of highly readable specifications called models and intuitive user operations, and is also an end-to-end solution providing a service platform. NTT DATA is working on R&D of LCP as the next generation production engineering technology, and developing in-house LCP with a Spanish affiliate for the purpose of early business utilization and flexible scale-out. In 2021, large-scale global rollout is planned, and it is expected that it will be necessary to secure the competitive advantage of our LCP and identify the target business. Based on those issues, the planned training program is as follows. *Research Investigate trends in LCP products and open source software, then evaluate brand-new and high potential tools. *Development & PoC Analyze feedback and log data received from our LCP users, propose user support functions using technologies such as machine learning, then implement and evaluate prototype. The following functions can be considered as an example. * Estimate correction points from test results (fault localization, fault-prone module prediction) * Estimate correction points from change requests (feature location) * Check consistency between components * Operation suggestions *Quality Assurance After understanding our quality assurance philosophy, verify the functionality and usability of our LCP mainly through exploratory testing. Assess the quality to ensure coverage and objectivity. *Global Deployment Based on the LCP applicable cases lead through a series of training programs, make clear the suitability for local business by communicating with sales agents in our global branches. Through the training programs, students can acquire the following experience and knowledge. | Mandatory: * Experience in web application development (any programming language OK, noncommercial application OK) * Basic understanding of web application architecture (MVC, SQL) and UML modeling Preferable: * Experience in implementation of NLP(natural language processing) utilizing machine learning.(text classification, summarizing) | U or M | English : CEFR B2 + | | | TBC | |

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| 24 | NTT DATA CORPORATION | 1 | Evolutional IT Center, Research and Development Headquarters | Research and evaluation of quantum computer. Develop of demo application on quantum computer | -Research papers on quantum computer machines, frameworks, and application examples - Evaluate the performance of quantum computer and/or quantum simulator by accessing them in the cloud - Develop the demo application based on the real business use cases. Those tasks will be done against quantum gate and/or annealing | Information science or Physics Familiarity with data science and formula is desirable Familiarity with Python programming is desirable | M | Fluency in English is a must. Being able to carry a daily conversation in Japanese is preferable | | | TBC | |
| 25 | Asial Corporation | 4 | Engineering Division, Asial Corporation | Frontend app development (Javascript, Frontend frameworks, CSS, UI/UX design) Backend app development (Node.js) | You will be joining one of the engineering team and work just like our regular company members. The tasks will be everything for developing a frontend or backend app, including system/UI design, programming, and testing. We have various development projects going on, and they could be our clients' service or our own service (including Monaca and Onsen UI, which are our products). We will have a discussion with you on the day one to decide which team you will be joining in. Our team will help you learn the process and programming. | Under minimal supervision by the director, our program is highly configurable based on the internship's preferences. Therefore, we strongly require proactive communication in English (or Japanese). Holding or studying for a computer science degree or relevant experience. Applicants are assumed to major computer programming, software development, deep learning, or related research and to have knowledge on their study fields. | U or M or D | Must be fluent in English. Japanese speaking level is not required but is a plus | | | Within several kilometers (walking distance) from the office located in the central Tokyo. Hongo-sancho station (Marunouchi and Oedo line) | |
| 26 | Yasui Architects & Engineers Inc. | 1 | Design Department | "Get a contents of the service in Japanese design & engineering office" Learn the process of Japanese design & engineering on the job in our office. | "Have some practical experiences of the process of Japanese design & engineering on the job" Learn the process of Japanese design & engineering on the job which is to plan, to make a architectural model, and to give a design presentation, so on. And realize the process of Japanese design & engineering deeply on practical experience of construction site | Architecture A candidate who shows interests in the theme written in (4)Details of Internship . | U or M or D | Pre-intermediate in Japanese (preferable) | | | Near Hodogaya Station (JR) | |
| 27 | NIPPON KAYAKU. CO.,LTD. | 1 | Functional Chemicals R&D laboratories | Research and Development of Photosensitive Organic Materials for Semiconductor and Microelectronics | Development of photosensitive organic materials including material design, formulation, evaluation and consideration at Functional Chemicals R&D Labs. | Specializes in organic chemistry, polymer chemistry, materials science, material engineering, analytical chemistry, applied chemistry, etc. so that the contents described in "Details of Internship" can be handled | M or D | English : essential (writing and speaking) Japanese : not required but preferable(speaking) | | | Nearest Station: : Saitamashintoshin station | |
| 28 | NISSAN ARC, LTD. | 1 | Functional Analysis Department, Nanomaterials Analysis Laboratory | Laser Spectroscopy as a Product: From Lab to Customers | Research results in the lab are often based on well-defined samples in very specific configuration. In contrast, industrial samples typically contain many additives and have to be analyzed "as is". The purpose of this internship is to develop new approaches to analyze unknown samples with laser spectroscopy and validate the results. The gained knowledge will be directly applied to actual customer commissions. | The student should have good understanding of laser spectroscopy (at least Raman, preferably non-linear methods). Further, knowledge in polymer materials and industrial processing is advantageous. The student should show interest in application development. | M or D | English: Reading, understanding and discussing scientific and technical texts, related to specialization. Writing basic technical documents. Japanese: After the language course, a level where you can understand the outline of what the other person is talking about. | | | Nearest station: Oppama station, Keiyou Main Line | |
| 29 | MIKUNI CORPORATION | 1 | Development Division | Research and development (Design & Experiment) | Test for the reliability assessment which are used throttle bodies and oil pumps, etc. in the two-wheeled vehicle or the four-wheel car. Drawing of parts for tests by CAD. | System, control engineering Mechanical engineering Electrical engineering A student who likes to challenge himself/herself, and has a curious mind to everything is welcome | U | English is essential, Japanese is not required | | | Nearest Station: Odawara Station | |
| 30 | OMRON SINIC X Corp. | 1 | Robotics Group | Robotic Manipulation and Assembly | At OMRON SINIC X, we develop new approaches, techniques and algorithms to satisfy societal needs with a 5-15 year horizon. This internship concerns supporting the implementation and development of new algorithms for manipulation and assembly with robotic arms. This may include writing code for and performing experiments with the robots and end effectors, discussing the results with the researchers, reading and writing papers, proposing and implementing hardware and/or software solutions. It may also include the design, assembly and control of new actuators and robot systems. We welcome candidates who are strongly motivated to publish the achievements in top conferences and top journals. | Requirements 1. Experience and strong interest in at least one of the topics shown below - Robotics: robotic skill learning, soft robotics, learning manipulation, task planning - Machine Learning: imitation learning, meta learning, reinforcement learning 2. Experiences in either robotics/deep learning frameworks (ROS, MoveIt, Gazebo/TensorFlow, PyTorch, etc.) 3. Strong publication record in either robotics or machine learning conferences 4. Fluency in English or Japanese Preferred skills / experience 1. Experience in shared codebases (GitLab, GitHub), Linux, and Docker 2. Experience in hardware development 3. Experience in competitions, including but not limited to machine learning competitions, robot competitions, and competitive programming 4. Contributions to open source software | D | Enough level of English (or Japanese) skill for research discussion and paper writing. | | | Nearest station: Kinshi-cho Station (Soubu/Oedo Line) | |
| 31 | OMRON SINIC X Corp. | 1 | Perception Group or Interaction Group | Machine Learning, Computer Vision, Human-Machine (or - Human) Interaction Analysis | At OMRON SINIC X, we develop new approaches, techniques and algorithms to satisfy societal needs with a 5-15 year horizon. The internship will concern performing the implementation and development of new algorithms for Computer Vision, Natural Language Processing, Bio-sensing, Matching Algorithms, and Cross-modal applications. This includes surveying the newest methods, writing code for and performing experiments, discussing the results with the researchers, writing papers, proposing and implementing both software and mathematical/theoretical solutions. We welcome candidates who are strongly motivated to publish the achievements in top conferences and top journals. | Requirements 1. Experience and strong interest in at least one of the topics shown below - Machine Learning: domain adaptation, meta learning, reinforcement learning - Computer Vision: 3D vision, vision and language, human sensing, visual forecasting 2. Experiences in deep learning frameworks (TensorFlow, PyTorch, etc.) 3. Strong publication record in either robotics, computer vision, machine learning, or human-computer interaction conferences 4. Fluency in English or Japanese Preferred skills / experience 1. Experience in shared codebases (GitLab, GitHub), Linux, and Docker 2. Experience in hardware development 3. Experience in competitions, including but not limited to machine learning competitions, robot competitions, and competitive programming 4. Contributions to open source software | D | Enough level of English (or Japanese) skill for research discussion and paper writing. | | | Nearest station: Kinshi-cho Station (Soubu/Oedo Line) | |
| 32 | ispace Inc | 1 | Mission Analysis and Flight Dynamics Group | Mission Analysis for commercial spacecraft lunar missions | ispace is a Japanese start-up with offices in Tokyo, Luxembourg and USA that aims to provide lunar transportation and exploration services. The applicant will join the Mission Analysis and Flight Dynamics Group at ispace (Tokyo office) for the duration of the program to support the development of our lunar lander mission. He/she will collaborate in one or several tasks depending on experience and interest: - Launch and Early Operation Phase analysis - Earth to Moon transfer analysis and design - Lunar orbit design and station-keeping - Landing trajectory analysis and design - Landing site analysis and selection - Navigation analysis and stochastic delta-v calculation - Flight Dynamics operations preparation Astrodynamics background is required. Programming skills, one of the following is required: Python, Matlab or c++ | Aerospace engineering or similar Astrodynamics / orbital dynamics background is required Programming skills, one of the following is required: Python, Matlab or c++ | M or D | English: Fluent Japanese: Not required | | | Not decided at the moment. We plan on renting a small apartment or a room in a share house (e.g. https://www.sakura-house.com/) in the 23-ku area. The details will be finalized after student selection. | |

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| reference code | company | Applicant's number | Host section | Theme of internship | Details of Internship | Specialization of the students | Level of students | Language level | Country | Gender | Accommodation (tentative) | Others |
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| 33 | FUJITSU LABORATORIES LTD. | 1 | Technology Development Group, DAU FUJITSU LABORATORIES | Developing optimization techniques with various Operations Research methods, mathematical modeling and reinforcement learning for solving actual social problems. | The task of internship student will be to develop optimization system for various actual complex and difficult social problems of Energy, Financial or Transportation industry. The techniques used in the development include various operations research methods, mathematical modeling, statistical approach, reinforcement learning, data analysis, etc. The student's task includes designing approach, development, experiments, analysis and improvement. As various methods and algorithms will be used, the student's skill level and preference will be considered in selecting the actual target problems. | 1. Need programming skill. (C++,Java,Python,) and knowledge of high performance algorithms. 2. Familiar with many Operations Research Techniques. LP, DP, Branch and Bound method, Column generation method, meta heuristics (SA,GA,PSO,) 3. Familiar with some of following subjects. Mathematical modeling, Statistics, Machine Learning, Reinforcement Learning, Various Numerical Optimization Technics- | M or D | English must, Japanese if possible | | | Stations around Musashi-Nakahara Station on the Nambu Line | |
| 34 | FUJITSU LABORATORIES LTD. | 1 | Service Matching Project Digital Innovation Core Unit Fujitsu Laboratories Ltd. | Data utilization technology using machine learning or statistical analysis | Our project is advancing to realize the digital society by data utilization technologies that can find the suitable combination among things. Data utilization technologies include optimization, recommendation, targeting, encrypted search and more. We are looking for the students who are researching not only for machine learning, but also statistics and so on. We expect you to work with us as below. - Estimation of constraints and its weights of matching problem using optimization/matching technologies and machine learning technologies - Development of algorithms to automatically estimate constraints and its weights of optimization/matching problems - Development of a system for field trials using the developed algorithms - Technical evaluation of the developed algorithms | A student who are familiar with data analysis such as machine learning, statistical analysis, recommendation system, or related technologies to be able to handle the theme written in "Details of Internship" | M or D | English must, Japanese if possible | | | Nearest station: Stations around Musashi-Nakahara Station on the Nambu Line | |
| 35 | FUJITSU LABORATORIES LTD. | 1 | Behavior Analysis Project Digital Innovation Core Unit Fujitsu Laboratories Ltd | Application of biometric authentication technology | Our project is going ahead to realize behavior analysis and biometric authentication technologies. We have long history on the biometric authentication field, and have contributed on lots of actual product such as access control of laptop. We are targeting for the students who are researching not only for biometric authentication, but also computer vision and so on. We expect you as below. - Development a trial software using cutting edge technology including OSS and build/run the algorithms for application of biometrics technology - Development of algorithms and systems using biometrics technology that is robust against unclearness images - Evaluation of the developed algorithms | : A student who are familiar with biometrics or computer vision. And a student who are familiar with OpenCV, python to be able to handle the themes written in "Details of Internship" | M or D | English must, Japanese if possible | | | Nearest station: Stations around Musashi-Nakahara Station on the Nambu Line | |
| 36 | FUJITSU LABORATORIES LTD. | 1 | Operation Technology Project DevOps Innovation Unit Fujitsu Laboratories LTD | Research on autonomous multi-cloud operation using AI technologies | Since new cloud native technologies has been emerging for multi-/hybrid-cloud and container environments, system operators are facing and tackling with complexity and difficult to operate such cloud native systems in stable and efficient manner. As one of the solutions, research on data-driven operation using AI technologies are widely attracting interest and expectation from industry and academia in order to realize silent failure detection, root cause analysis, performance degradation prediction and so on. In addition to the above mentioned system diagnose technologies, we are researching on automatic system design and system recovery technologies to achieve autonomous system lifecycle management technologies from system design, monitoring, diagnosis and control. We are able to use in-house DC and cloud service data to accelerate our research for practical commercial use. | Computer Science and Engineering, Software Engineering A student who are familiar with ICT system operation/management and AI/MachineLearning to be able to handle the themes written in "Details of Internship" | M or D | English must, Japanese if possible | | | Nearest station: Stations around Musashi-Nakahara Station on the Nambu Line | |
| 37 | FUJITSU LABORATORIES LTD. | 1 | ICT Systems Laboratory Advanced Computer Systems Project | Autonomous acceleration technologies for AI workload by analyzing computing behavior | In order to accelerate the diversified AI workload, the computation accuracy and procedure are optimized by dynamically analyzing the behavior of the workload. This optimization is dynamic and inequivalent program transformation from source code to binary code, and aims at an acceleration effect that dramatically exceeds the optimization of the language processing system by the conventional equivalent transformation. | Knowledge and experience of Machine Learning(must) Knowledge of Computer Architecture(must) Knowledge of Compiler including optimization and runtime library(preferred) Programming skills of C/C++ applications(must) Experience of GPGPU application development(preferred) Experience of reading and understanding of more than 10 technical papers(must) | M or D | English must, Japanese if possible | | | Nearest station: Stations around Musashi-Nakahara Station on the Nambu Line | |
| 38 | FUJITSU LABORATORIES LTD. | 1 | Autonomous Machine Learning Project, Artificial Intelligence Laboratory | A prediction of time dependent numerical simulations with machine learning | Numerical simulations are widely used in many fields, like fluids, solids, or electromagnetics, from industrial to science, but often cost too much, especially when designers want to know the approximate results of their design. The machine learning technologies have come to be used as a surrogate model of numerical simulations, but their usage remains only in the steady state simulations. In this internship program, we want to try the inference of a time dependent physical quantities with machine learning technologies. | Students who have rich knowledge in machine learning field. In addition, it would be even better if the student has an interests and basic groundings or even experiences about classical physics, like fluid dynamics, and their numerical simulation. | M or D | English must, Japanese if possible | | | Nearest station: Stations around Musashi-Nakahara Station on the Nambu Line | |
| 39 | MICRO MIM JAPAN HOLDINGS Inc | 1 | Planning Department Technical Development Group | Microstructural evaluation of sintered body by difference of metal powder particles | Analysis and evaluation of various metal powders Production of sintered body Observation and evaluation of internal structure of sintered body Department of Mechanical Engineering (Development of manufacturing processes applying deformation processing of metal and powder materials) Department of Mechanical Physics, Department of Mechanical Design (Research on Micromachining) | Metal Properties/ Mechanical system engineering Metalengineering/Material production Department of Materials Science Department of Precision Mechanical Engineering Department of Materials Production Science | M or D | English is essential, Japanese is a plus | | | Nearest Station: Neyagawa Station | |
| 40 | Hitachi.Ltd., Research & Development Group | 1 | Intelligent Information Research Department Center for Technology Innovation - Digital Technology | Unsupervised Detection of Anomalous Sounds for Machine Condition Monitoring | We are developing new technologies for unsupervised anomalous sound detection for machines. In this program, we expect that an intern student will tackle the following open research question: · How can anomalous sounds be distinguished from noise? (noise robustness) · How can feature engineering for each kind of machine be avoided? (general purpose) In 2019, we have published a dataset of real machine sounds, named "MIMII Dataset" (https://zenodo.org/record/3384388). This dataset will be used in this program. | Signal Processing and Machine Learning for Acoustics or Other Types of Signals | M or D | Either English or Japanese is required | | | Nearest Station: Female dormitory-Kokubunji Station (JR) Male dormitory- Nishi Kokubunji Station (JR) | |
| 41 | Hitachi.Ltd., Research & Development Group | 2 | Media Intelligent Processing Research Department Center of Technology Innovation - Digital Technology R&D Group, Hitachi, Ltd. | Development of intelligent computer vision technology such as activity and event detection/prediction to be applied for industry and security. (Depending on project, implementation on edge hardware like nVidia Jetson or FPGA boards.) | At the Media Intelligent Processing Research Department we are developing edge-cutting video analytics technologies for industry partners and the public. Your task will be the understand the scale of the assigned project, survey possible approaches in video analysis and implement those solutions to provide a prototype. In most parts trough the project you will be working independently and will have to report your progress in regular meeting. | Knowledge and specialization in computer vision, VR/AR or machine learning. Coding skills in Python (Java and C++ optional). Ability to survey recent research trends and implementation of prototypes. | M or D | English communication skills (intermediate to business) | | | Nearest Station: Female dormitory-Kokubunji Station (JR) Male dormitory- Nishi Kokubunji Station (JR) | |
| 42 | Hitachi.Ltd., Research & Development Group | 1 | Data Storage Research Dept | Research on data compression technology using machine learning | Massive digital data is generated in the IoT fields and storing data will become difficult in future. You participate in a research team of deep learning based compression technology for massive IoT digital data. You will try technical study, prototype development and evaluation with the team. | Machine learning knowledge (especially in auto encoders or generative models or autoregressive models) and implementation experience using pytorch. Interest in data storage that stores large amounts of data that is practically used in various industries. In addition, knowledge of data compression is desirable | M or D | English essential | | | Nearest Station: JR Tokai line, Yokosuka line, Shonan Shinjyuku line Totsuka Station | |
| 43 | Hitachi.Ltd., Research & Development Group | 1 | Information Electronics Research Department, Hitachi, Ltd. R&D Group | Development on sensing system and edge analytics algorithm for industrial IoT | Development on edge system for industrial IoT such as smart factory. System implementation and field trial of sensors and edge analytics algorithm for sensing data. | Electrical engineering, Electronics, system engineering, Information engineering, Information science. Students who have experienced to develop on sensing systems or signal processing techniques. | M or D | Communication ability by either English or Japanese | | | Nearest Station: Female dormitory-Kokubunji Station (JR) Male dormitory- Nishi Kokubunji Station (JR) | |
| 44 | Mitsubishi Chemical Corporation | 2 | Science & Innovation Center, Inorganic Materials Laboratory | Development of functional inorganic materials | Development of functional inorganic materials such as scintillator materials for radiation detection, fast-oxygen adsorbents for oxygen separation, inorganic nano-sheets coating on resin films is carried out. Students can experience a set of processes in development from researching literatures and reports, planning, synthesis of materials, evaluations, and analyses with the support of our staffs. | Chemistry Inorganic chemistry Materials science Physical chemistry etc. | M or D | English must | | | Nearest Station: Aobadai | |

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| 45 | Hitachi Ltd, Research & Development Group | 1 | Electromagnetic Application Systems Research Department, Research Unit No.2 | R&D of nondestructive inspection technologies for complex-shape objects and small defect detection | Our program develops nondestructive inspection technologies for complex-shape objects and small defect detection. The targets are complex-shaped parts in high-voltage and automotive systems. We expect your achievement in prototyping data analysis (e.g., utilizing mechanical learning) and online inspection system. | Researchers who are interested in measurement, data analysis, and systemization of nondestructive inspection. Measurement principles we use are light(digital image), electromagnetics, ultrasound, and radiation. We welcome researchers who highly motivate developing efficient inspection methods for complex-shape objects, small defects less than um in size . | M or D | English or Japanese skill with smooth conversation is required | | | The dormitory or the apartment of the neighborhood. The detail is decided after acceptance | |
| 46 | Hitachi Ltd, Research & Development Group | 1 | Advanced Simulation Research Department Center for Technology Innovation-Mechanical Engineering | Computer aided idea generation | A student will develop a computer aided idea generation system for efficient brainstorming. The system will help people come up with brilliant ideas which may inspire innovation by means of optimization, machine learning, natural language processing, and any other best available technologies. The student will work on interface design and/or algorithm development for idea generation to obtain the brilliant ideas. Main work in the internship (interface design and/or algorithm development) and technique to be used (optimization, machine learning, or natural language processing) are dependent on the student. | < Required > · Experience in programming < Preferred > · Experience in algorithm development or implementation · Basic knowledge of optimization, machine learning, or natural language processing · Basic knowledge of web application · Basic knowledge of human science | U or M or D | English: a candidate should be able to engage himself/herself in daily and technical conversation in English. Japanese: not required | | | The dormitory or the apartment of the neighborhood. The detail is decided after acceptance | |
| 47 | Hitachi Ltd, Research & Development Group | 1 | Hitachi, Ltd. Research & Development Group Thermal Fluidic Systems Research Department Center for Technology Innovation – Mechanical | Development of acoustic virtual reality | Development of acoustic virtual reality technology to design product sound without prototyping combining multi-channel high-presence acoustic field reproducing facility, microphone array and acoustic simulator. | Have expertise in acoustics, vibration, signal processing, or image processing. Knowledge of software development using Python, Matlab or C ++, etc. | M or D | English is required. Level of Japanese regardless. | | | The dormitory or the apartment of the neighborhood. The detail is decided after acceptance | |
| 48 | Hitachi Ltd, Research & Development Group | 2 | Hitachi, Ltd. Research & Development Group Center for Technology Innovation – Mechanical Engineering Thermal Fluidic Systems Research Department | Simulation of complex phenomena inside heat pipes | Development of simulator with C language In order to understand phenomena inside pulsating heat pipes | Heat Transfer Engineering, Thermal Fluid Dynamics | M or D | English: Conversational level, Japanese: Not Required (Basic is fine) | | | The dormitory or the apartment of the neighborhood. The detail is decided after acceptance | |
| 49 | Hitachi Ltd, Research & Development Group | 1 | R&D Group, Center for Technology Innovation – Mechanical Engineering, Robotics Research Department | Development of assembly automation technology with robot simulation environment | Responsibilities: 1. Industrial robot modelling and configuration in simulation environment (Rviz, Gazebo) 2. Basic path planning for automation of assembly tasks (upon accomplishment of 1) 3. Simple deep neural network training in simulation environment (upon accomplishment of 2) | Minimum qualifications: - Experience with programming in any language - Basic knowledge about robots or basic mechanical systems Preferred Qualification: - Experience with python or C++ programming - Basic experience with robot programming and simulation (ROS, Gazebo) - Basic experience with deep learning algorithms | M | Business English Level/ Basic Japanese (for daily life conversation) | | | The dormitory or the apartment of the neighborhood. The detail is decided after acceptance | |
| 50 | Hitachi Ltd, Research & Development Group | 1 | Reliability Science Research Department Center for Technology Innovation - Mechanical Engineering | Mechanical experiment and simulation about bearing and gear | To develop reliability estimation technique for rolling bearing*1 and gear*2. Mechanical experiment, theoretical calculation and finite element analysis will be conducted. Training of general design technique of mechanical element will be conducted. *1 rolling bearing : for wind turbine, generator, motor, compressor, and others. *2 gear : for generating equipment, construction machine, ship, and others. Through this intern, you can master the skills below. -3D CAD modeling (SolidWorks®) -Stress / vibration analysis using finite element method (ANSYS®) -Design of gear/rolling bearing test rig and test piece -Reliability evaluation method for mechanical elements -Basic knowledge of tribology and mechanical elements | · Mechanical Engineering · Knowledge about mechanical elements such as gear and rolling bearing and tribology is preferred | U or M or D | A person who can communicate in English or Japanese | | | The dormitory or the apartment of the neighborhood. The detail is decided after acceptance | |
| 51 | Hitachi Ltd, Research & Development Group | 1 | Center for Technology Innovation - Mechanical Engineering Reliability Science Research Department | Reliability quantification for mechanical systems utilizing IoT data and physical model. | A trainee will be involved in a research project for quantification and prediction of the reliability and the useful lifetime of mechanical systems such as industrial, energy and medical equipment. An experience for developing a data-physics hybrid modeling technology for IoT big-data and physical modeling of mechanical systems. This theme would provide following skills for a trainee. · Big-data analysis on real IoT data (Machine learning, Statistical modeling, etc) · Uncertainty quantification · Physical modeling of mechanical systems. | General knowledge in mechanical engineering (Experiences for programming and data analysis with Python are preferred.) | U or M or D | Technical communication in English. No preference in Japanese level. | | | The dormitory or the apartment of the neighborhood. The detail is decided after acceptance | |
| 52 | Hitachi Ltd, Research & Development Group | 2 | Advanced Materials and Processing Research Department | Synthesis, analysis, and evaluation of catalysts as carbon conversion materials | · Synthesis, analysis and evaluation of carbon conversion catalyst samples. · Investigation and discussion on reaction mechanism · Proposal for higher performance catalyst materials and systems | Major in Chemistry is Mandatory. Knowledge and experience in the following fields are preferable. 1. Catalyst (especially inorganic catalyst) 2. Analysis (e. g. FT-IR, XRD, XPS) | M or D | English: Fluent level enough for academic discussion. Japanese: No requirement. | | | The dormitory or the apartment of the neighborhood. The detail is decided after acceptance | |
| 53 | Hitachi Ltd, Research & Development Group | 1 | Biochemical Materials Research Department, B2Unit | Organic materials science & engineering for bio- and/or environment-related applications | You will engage in R&D works on novel organic materials for bio-/environment-related applications. Specifically, you will do simple experiments, make reports, and discuss the results. We will provide an introductory guidance on the research and experiment beforehand. | Materials science/materials chemistry Applied students are desired to have a command of Microsoft Office (Word, Excel, and PowerPoint). | M or D | English: Ability to read, write and speak English without difficulty (English is used on duty for work) Japanese: No special ability is required. | | | The dormitory or the apartment of the neighborhood. The detail is decided after acceptance | |

