



National Institute for Mathematical Sciences

Job Announcement

(Post-doctoral Researcher, Internship)

Notice 2022-03

The National Institute for Mathematical Sciences is a research institute that discovers and solves the mathematical problems of industry, science and technology, and the public domain and also the R&D-based research and manpower training of the mathematical science field.

The National Institute for Mathematical Sciences is seeking talented individuals who have a spirit of taking on challenges who want to contribute to society by communicating with a variety of researchers and solving the world's problems through mathematics.

□ Recruitment Details

Type of Occupation	Category	Department	Location	Field of study	Job Description	Number of openings
Researcher	Post-doctoral Researcher (Temporary)	Busan Center for Medical Mathematics	Busan	All majors related to mathematical sciences (Mathematics, Physics, Statistics, Computer Science, Computer engineering, etc.)	<ul style="list-style-type: none"> ○ Medical Data Analysis and Prediction Model Development using Machine Learning and Deep Learning ○ Discovering and solving industrial/medical math problems using such as data analysis, mathematical modeling, and optimization ○ Project proposal related to industrial/medical mathematics problems <ul style="list-style-type: none"> - Planning for Industry/Medical Mathematics Research - Developing Data analysis, mathematical modeling, optimization to solve Industrial / Medical Mathematics Problems 	2
		Medical Imaging Team	Daejeon	All majors related to mathematical sciences (Mathematics, Statistics, Scientific Computing, Computer Sciences, Physics, etc.)	<ul style="list-style-type: none"> ○ Medical imaging (X-ray CT, PET, Ultrasound, etc.) research ○ Image processing (image quality enhancement, object segmentation and detection, 3-D Reconstruction using Pointclouds, etc.) research ○ Medical image analysis research using machine learning(deep Learning), statistics, mathematical techniques, etc. 	1

Research	Post-doctoral Researcher (Temporary)	Data Analytics Team	Daejeon	Mathematical Sciences, and its related majors (Mathematics, Statistics, Computer engineering, Physics, etc.)	<ul style="list-style-type: none"> ○ Research & Development of Data-based Predictive Model using Machine Learning - Research on Data-Analytics and Predictive Models/Algorithms Development using Mathematical Sciences and Mechanical Learning - Solving Industrial Problems 	1
		Applied Geometry Team	Daejeon	All majors related to mathematical sciences (Geometry, Topology, Graph theory, Statistics, Computer engineering, Physics, etc.)	<ul style="list-style-type: none"> ○ Fundamental Research and algorithm development for Medical Mathematics - Research for Representation Learning Algorithm Using Geometry or topology of Non-Euclidean Data such as Graphs and Manifolds - Finding and solving medical and health problems through molecular structure characteristic analysis, drug design, and social network analysis 	1
		Innovation Team for Industrial Mathematics (Gwanggyo)	Suwon (Gwanggyo)	All majors related to mathematical sciences (Mathematics, Statistics, Computer Science, Physics, etc.)	<ul style="list-style-type: none"> ○ Solving Industrial Problem & Research for related topics - Mathematical-Based research for AI and Data Analysis - Join Industrial problem solving and research projects - Operation of Industrial Mathematics Education Program and Performance Spread Program 	3
		Innovation Team for Industrial Mathematics (Daejeon)	Daejeon	All majors related to mathematical sciences (Mathematics, Statistics, Computer engineering, Physics, etc.)	<ul style="list-style-type: none"> ○ Development of Data Analysis and Prediction Models Using Machine Learning and Deep Learning ○ Finding and solving industrial mathematical problems using applied research such as data analysis, mathematical modeling, and optimization ○ Finding and Solving New Research Topics in Industrial Mathematics - Research Planning on Industrial Mathematics - Applied Research for data analysis, mathematical modelling, optimization for solving industrial problem ○ Operation of Industrial Mathematics Popularization Program 	2

Research	Post-doctoral Researcher (Temporary)	Division of Fundamental Research on Public Agenda	Daejeon	All majors related to mathematical sciences (Data Science, Traffic engineering, Social science, Business management, Computer engineering, Statistics, Earth science, Astronomy, Physics, Applied mathematics. etc.)	<ul style="list-style-type: none"> ○ Analysis and mathematical model research of public sector data(climate change, disaster/safety, earthquake, gravity, global environment, transportation, population, social/economic costs, etc.) ○ Analysis of gravitational wave data and research of gravitational wave ○ gravity data analysis related to earthquake ○ A Study on Alternative Theories of Gravity for Gravitational wave Sources 	4
		Cryptographic Technology Research Team	Daejeon	Cryptology, Information security, Algebraic geometry, Number theory, Computer engineering, Electrical Engineering, Information and communication, software-related majors	<ul style="list-style-type: none"> ○ Security Analysis of Public-Key Cryptographic Algorithms ○ Implementation of public-key cryptographic algorithms ○ Application of public-key cryptographic algorithms (Blockchain, homomorphic encryption, IoT Security) ※ You can apply if you meet at least one of the descriptions above 	2
		Research team for transmission dynamics of infectious diseases	Daejeon	Natural science, Engineering , Preventive medicine, Public health, Social science, Business management,	<ul style="list-style-type: none"> ○ Prediction of transmission dynamics of infectious diseases based on data and analyzing the effectiveness of quarantine policies ○ Research for transmission dynamics of infectious diseases using mathematical modeling, machine learning, and statistics 	2
	Internship (Temporary)	Busan Center for Medical Mathematics	Busan	Mathematics, Statistics, Physics, Biology, Computer engineering/science, Computational science, etc.	<ul style="list-style-type: none"> ○ Research Assistance in discovering and solving problems in industry and healthcare fields ○ Research Assistance using data analysis and Mathematical modeling ○ R&D project planning support and assistance 	1

Research	Internship (Temporary)	Division of Fundamental Research on Public Agenda	Daejeon	All majors related to mathematical sciences (Data Science, Traffic engineering, Social science, Business management, Computer engineering, Statistics, Earth science, Astronomy, Physics, Applied mathematics. etc.)	○ Analysis and mathematical model research of public sector data(climate change, disaster/safety, earthquake, gravity, global environment, transportation, population, social/economic costs, etc.)	2
		Cryptographic Technology Research Team	Daejeon	Cryptology, Information security, Algebraic geometry, Number theory, Computer engineering, Electrical Engineering, Information and communication, software-related majors	○ Investigation of security and cryptographic algorithms / Implementation of cryptographic algorithms	1
Research Support	Internship (Temporary)	Busan Center for Medical Mathematics	Busan	No restrictions	○ (Research project management) Review of major projects, contract projects, and agreements ○ (Administration of affairs) Plan and supervision of research events such as conferences, workshops, seminars, and meetings	1
		Innovation Team for Industrial Mathematics (Gwanggyo)	Suwon (Gwanggyo)	No restrictions	○ Support for activities carried out in the Project of finding and solving industrial mathematics problems ○ General research support required for research activities ○ Conducting and broadcasting operations of seminar, colloquium	1

※ The Innovation Team for Industrial Mathematics(Gwanggyo) is expected to relocate to Pangyo in the second half of 2022.

※ Please refer to the job description material for more details regarding the job and requirements.

※ You may be placed in a different department than the one you applied for.

□ Overview

Post-doctoral Researcher (Temporary)	<ul style="list-style-type: none"> ○ [Working hours] 5 days a week (Monday ~ Friday), 8 hours a day ○ [Location] The National Institute for Mathematical Sciences Head office or Center ○ [Payment] In accordance to the internal regulations
Internship (Temporary)	<ul style="list-style-type: none"> ○ [Working hours] 5 days a week (Monday ~ Friday), 8 hours a day ○ [Location] The NIMS, Daejeon (Head office), Pangyo, Busan(Center) ○ [Payment] In accordance to the internal regulations

□ Qualifications

Post-doctoral Researcher (Temporary)	<ul style="list-style-type: none"> ○ (Based on the expected date of appointment) Must not have passed 5 years since receiving a doctorate degree Or must be expected to receive a doctoral degree within 3 months (Must submit a certificate of expected degree) ※ Expected date of appointment: Sep 1st, 2022 (If it's after the expected date of appointment, you will be disqualified) ○ Minimum requirement: more than 1 SCI(E) paper published ※ Certificates and supporting documents must be completed before the application deadline ※ The minimum contract term is one year. Maximum is 3 years
Internship (Temporary)	<ul style="list-style-type: none"> ○ Must be able to work full time (09:00~18:00) ○ Graduate from a four-year university or recognized to have equal capabilities ※ Applicants who are scheduled to graduate in August 2022 can apply ※ Certificates and supporting documents must be completed before the application deadline ○ According to the Special Act on the Promotion of Youth Employment Article 2, anyone under the age of 34 (as of the date of the expected date of appointment) ※ Expected date of appointment: Sep 1st, 2022 (If age is higher as of the expected date of appointment, you will be disqualified) ※ The first contract is less than 11 months, and according to internal regulation, it may be extended once

※ Date of admission may be negotiated to within a month of the announced expected date of appointment. If this is not possible, your acceptance may be canceled.

☐ Application Eligibility and Additional Points

[General Requirement]

- No gender restriction
- A person who has no reason for disqualification under the State Public Officials Act Article 33 and internal regulations of the institute
- (in case of a person liable for military service in Korea) the person must have completed or been exempted from military service
- A person dismissed for corruption under the Prevention of Corruption and the Establishment and Management of the Anti-Corruption and Civil Rights Commission Act Article 82 (Dismissed for corruption and restrictions on employment) cannot apply
 - A person removed from other public institutions due to hiring irregularities is restricted from applying for 5 years

[Additional Points]

- Disabled (Additional 5% points for each screening procedure) and those eligible for employment protection (person of national merit or distinguished service to the state receive additional 5~10% points for each screening procedure). If you submit the proper documents, based on the related Act, preference will be given
- Female scientists will receive (under the relevant laws) additional 5% points for the Application review stage.
 - ※ Additional points are limited to post-doctoral researchers and internship (research) for the female scientists.
- If you submit certificates and supporting documents related to administrative work, additional points will be given according to internal regulations
 - ※ Additional points for certification are limited to applicants for internship (research support)

☐ Hiring Process

Category	Evaluation Standard
Job Announcement and Application Period	· Jun 29th, 2022 (Wed.) 10:00 ~ July 19th, 2022 (Tue.) 24:00 (20 days) (Korean Standard Time)
1st Stage: Application Review	· Capabilities, Suitability, etc. / 5 times the number of open positions
2nd Stage: Interviews (Presentations)	· Capabilities, Attitude, Thinking Skills / Number of open positions ※ Presentations will be omitted for internship (research support) applicants
3rd Stage: Physical Examination and Admission Date Negotiation	· Physical examination for government employee, background check for dismissal due to corruption / Unqualified people will be disqualified ※ Admission date negotiation / If admission within a month of the expected date of appointment is not possible, your acceptance may be canceled

□ Hiring Stage and Documents Submission

Category	Documents for Submission	Notes
1st Stage: (Application Review)	<ul style="list-style-type: none"> • Submit application and supporting documents online (http://nims.recruiter.co.kr) <ul style="list-style-type: none"> – First page of thesis (title, author, presentation date, journal, with the vol. number and page number included), abstract of thesis, a copy of the certificate of patent registration – A copy of Certificate of Career (Employment), a copy of certificates or supporting documents providing evidence for results – (To those who apply) A copy of the certificate of national merit / a copy of the disability certificate ※ For SCI(E) journals, include on the back of the thesis a printed proof of the journal's IF of the year it was published and submit ※ Cover up all information that may be a source of bias in the supporting documents you will upload. 	※ Blind hiring process will be implemented to reduce the risk of bias in the hiring decision. Cover up all information that may be a source of bias in the supporting documents you will upload, such as school, age, gender, photos, date of birth, name, family members, co-author's name, supervising professor, name of person responsible for project. Failure to do so may result in disqualification
2nd Stage: (Interviews [Presentations])	<ul style="list-style-type: none"> • The original diplomas and transcripts of every degree <ul style="list-style-type: none"> – Recipients of doctoral degrees from foreign universities must submit a certificate of foreign doctorate report issued by the Nation Research Foundation of Korea • A copy of the resident registration certificate and family relation certificate (with the second half of the resident registration number covered) • (in case of a person liable for military service in Korea) Certificate of military service completion or resident registration certificate (must include information of military service). The second half of the resident registration number must be covered • Certificate of Career (including certificate of health insurance qualification of gains and losses) and original certificate of employment • A copy of the supporting documents (achievements) included in the application form and a copy of the certificate • Submit the presentation material in advance through e-mail (this will be guided separately), and on the day of presenting, bring the material with you on a USB <ul style="list-style-type: none"> ※ Bring your ID card to confirm your identity (For foreigners, submit a document that can confirm your identity) 	※ On-site submission on the day of the interview ※ Online interviews (presentations) available for overseas applicants ※ The presentation may be omitted or changed depending on the field of recruitment.
3rd Stage: (Physical examination, admission date negotiation)	<ul style="list-style-type: none"> • Physical examination for government employee • Background check for dismissal due to corruption • Submitting other essential documents for employment <ul style="list-style-type: none"> ※ If there are no abnormality in the negotiation for the date of admission, physical examination of government employee, and background check for dismissal due to corruption, then you will be hired 	※ Physical examination for government employee: Do the physical examination for employment for state public officials at a national or public general hospital (including university hospitals) and then submit the results

※ The dates for each stage may change depending on the institute's situation

- ※ The results of each stage will be individually notified through text message or e-mail. The topic of the presentation will later be announced only to those who are expected to present
- ※ The application will only be accepted if all documents for submission are ready
- ※ If the documents are not submitted on site, acceptance can be cancelled.
- ※ If there is a tie score in the interview (presentation) stage, the person with the higher score in the application review stage will be accepted

☐ How to Apply and Period of Application

- How to apply : Online application (<http://nims.recruiter.co.kr>)
- Announcement and application period: Jun 29th, 2022 (Wed.) 10:00 ~ July 19th, 2022 (Tue.) 24:00
(Korean Standard Time)
- Address
 - Head office : (Daejeon) 70, Yuseong-daero 1689beon-gil, Yuseong-gu, Daejeon, Republic of Korea
 - Center : (Busan) 179, Gudeok-ro, Seo-gu, Busan, Republic of Korea
(Gwanggyo) 105, Gwanggyo-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, Republic of Korea

☐ Further Information

- The application form must be written in Korean and list of results written in English is not necessary to translate in Korean.
- The penalties for mistakes, omission, and not submitting the required documents will be the applicant's responsibility. If any information is confirmed to be false, your acceptance may be canceled
- Blind hiring process will be implemented to reduce the risk of bias in the hiring decision. cover up all information(including file name to upload) that may be a source of bias in the application form and in the supporting documents, such as school, age, gender, photos, date of birth, name, family members, co-author's name, supervising professor, name of person responsible for project. Failure to do so may result in disqualification
- If unqualified after the background check for dismissal due to corruption, or the physical examination for government employee, your acceptance may be canceled
- If there is no one qualified among the applicants, the institute may choose not to hire anyone, and if there is evidence of cheating during or after the hiring process, your acceptance may be canceled
- For each category, if the number of applicants is less than the number of positions available, the hiring may be canceled or the application period may be extended
- The National Institute for Mathematical Sciences does not receive any form of special consideration for a job position, and if it is found that there were favors regarding employment, your acceptance will be canceled, and even if this is after your appointment, you will be penalized or dismissed according to the institute's regulations
- If hired, your field of work as well as rank and the calculation of work experience will be conducted according to the institute's regulations
- Your assigned work and department may be different from the one you applied for depending on the institute's circumstances
- All the information to be announced regarding hiring, such as the acceptance notification, and dates will be individually notified via text or e-mail

- After hiring is complete, if a candidate(not including hired candidates) requests the return of employment documents (documents for on-site submission for the interview stage only), after confirming identity, employment documents must be returned under the Fair Hiring Procedure Act
- If a successful candidate fails in the background check(for foreigners) or the physical examination for government employee or gives up being appointed, and the institute needs to fill the position, within 3 months of the acceptance announcement, the people who are next in line in test scores and don't fall under the criteria for disqualification may be selected additionally
- If a successful candidate is of a foreign nationality, the candidate must prepare in advance a certificate of criminal record from his or her own country's public security agency for the background check
- Expected date of appointment: Sep 1st, 2022
- Work Place : Head Office or Center of the National Institute for Mathematical Sciences
- COVID-19-related precautions: Confirmed cases, possible cases (a person with fever or respiratory symptoms after contact with an infected person), suspected cases, or those who are in quarantine after receiving a notice of hospital treatment (or a notice of self-quarantine) are restricted from entering the test site, so if you are notified to take the test, please contact the institute immediately
- Anything not indicated here or anything that needs to be interpreted will follow the institute's decision

☐ **Contact**

- Hiring site FAQ, Q&A, Tel : +82-42-717-5788

June 29th, 2022

President of the National Institute for Mathematical Sciences