

List of research topics for NII International Internship Program 2026 1st Call

No.	Research Area	Title of the Research	Website	Name of supervisor	Title of the supervisor	Requirements for Applicants: Master / Ph.D. Student	Total Number of Acceptance per Supervisor	Duration : 2-6months (less than 165days)	Comments
<b>1. Principles of Informatics Research Division</b>									
P00501	algorithm theory	research on efficient enumeration algorithm	<a href="http://research.nii.ac.jp/~uno/">http://research.nii.ac.jp/~uno/</a>	Takeaki Uno	Professor	Either	4	2 - 6 months	
P01101	Machine learning	Geometric analysis of machine learning models	<a href="https://mahito.nii.ac.jp">https://mahito.nii.ac.jp</a>	Mahito Sugiyama	Associate Professor	Ph.D.	2	3 - 6 months	Legendre decomposition (information geometric tensor decomposition; NeurIPS 2018): <a href="https://arxiv.org/abs/1802.04502">https://arxiv.org/abs/1802.04502</a> Many-body approximation for tensors (NeurIPS 2023): <a href="https://openreview.net/forum?id=5yedZXV7wt">https://openreview.net/forum?id=5yedZXV7wt</a> Data augmentation (ICLR 2026): <a href="https://arxiv.org/abs/2410.00718">https://arxiv.org/abs/2410.00718</a>
P01102	Machine learning	Geometric approaches to SAT	<a href="https://mahito.nii.ac.jp">https://mahito.nii.ac.jp</a>	Mahito Sugiyama	Associate Professor	Ph.D.	2	3 - 6 months	Legendre decomposition (information geometric tensor decomposition; NeurIPS2018): <a href="https://arxiv.org/abs/1802.04502">https://arxiv.org/abs/1802.04502</a> FourierSAT: <a href="https://arxiv.org/abs/1912.01032">https://arxiv.org/abs/1912.01032</a> <a href="https://www.sciencedirect.com/science/article/pii/S0004370221001107">https://www.sciencedirect.com/science/article/pii/S0004370221001107</a>
P01103	Machine learning/Data mining	Machine learning for graphs	<a href="https://mahito.nii.ac.jp">https://mahito.nii.ac.jp</a>	Mahito Sugiyama	Associate Professor	Ph.D.	2	3 - 6 months	Molecular Graph Generation by Decomposition and Reassembling: <a href="https://doi.org/10.1021/acsomega.3c01078">https://doi.org/10.1021/acsomega.3c01078</a> Flatten Graphs as Sequences: Transformers are Scalable Graph Generators: <a href="https://arxiv.org/abs/2502.02216">https://arxiv.org/abs/2502.02216</a>
P01201	Artificial Intelligence	Knowledge Graph Applications	<a href="http://www-kasm.nii.ac.jp/~takeda">http://www-kasm.nii.ac.jp/~takeda</a>	Hideaki Takeda	Professor	Either	3	3 - 6 months	
P01202	Artificial Intelligence	Building and Applications for Academic Knowledge Graph		Hideaki Takeda	Professor	Either	3	3 - 6 months	
P01203	Legal Informatics	Applying AI in the legal information processing	<a href="https://ds.rois.ac.jp/en_center7/">https://ds.rois.ac.jp/en_center7/</a>	Hideaki Takeda	Professor	Either	3	2 - 6 months	
P02001	Theoretical Computer Science	Sensitivity Analysis/Lipschitz Continuous Algorithms	<a href="https://arxiv.org/abs/2211.04674">https://arxiv.org/abs/2211.04674</a> <a href="https://arxiv.org/abs/2111.02657">https://arxiv.org/abs/2111.02657</a> <a href="https://arxiv.org/abs/2411.02744">https://arxiv.org/abs/2411.02744</a>	Yuichi Yoshida	Professor	Ph.D.	3	2 - 6 months	
P02002	Data Mining	Sensitivity Analysis/Lipschitz Continuous Algorithms	<a href="https://openreview.net/forum?id=VM7u8eclrZV">https://openreview.net/forum?id=VM7u8eclrZV</a> <a href="https://openreview.net/forum?id=boik01yhssB">https://openreview.net/forum?id=boik01yhssB</a>	Yuichi Yoshida	Professor	Ph.D.	3	2 - 6 months	
P02003	Theoretical Computer Science	Spectral Graph Theory for Directed Graphs and Hypergraphs	<a href="https://arxiv.org/abs/2106.02353">https://arxiv.org/abs/2106.02353</a> <a href="https://arxiv.org/abs/2201.07289">https://arxiv.org/abs/2201.07289</a>	Yuichi Yoshida	Professor	Ph.D.	3	2 - 6 months	
P02004	Theoretical Computer Science	Sublinear-time Algorithms	<a href="https://arxiv.org/abs/2204.08404">https://arxiv.org/abs/2204.08404</a> <a href="https://arxiv.org/abs/2210.12601">https://arxiv.org/abs/2210.12601</a>	Yuichi Yoshida	Professor	Ph.D.	3	2 - 6 months	
P02101	Computational Complexity Theory	Meta-complexity, average-case complexity, pseudorandomness, and the Minimum Circuit Size Problem	<a href="https://eccc.weizmann.ac.il/report/2022/119/">https://eccc.weizmann.ac.il/report/2022/119/</a> <a href="https://eccc.weizmann.ac.il/report/2021/058/">https://eccc.weizmann.ac.il/report/2021/058/</a>	Shuichi Hirahara	Associate Professor	Either	2	2 - 6 months	It is desirable that applicants have a conference publication in complexity theory.
P03401	Robotics	Real-world robot learning		Taisuke Kobayashi	Assistant Professor	Ph.D.	2	4 - 6 months	Knowledge and experience of reinforcement learning and/or imitation learning are required. The details of the research contents will be decided by prior discussion.
P03402	Robotics	Optimisation and Optimal Control for Robotic Systems		Taisuke Kobayashi	Assistant Professor	Ph.D.	2	3 - 6 months	Requirements: Master's degree or equivalent experience in control theory, learning theory, optimisation, or robotics
P03501	Quantum information	Theoretical and/or numerical research on quantum information processing	<a href="https://quantum.nii.ac.jp/">https://quantum.nii.ac.jp/</a>	Akihito Soeda	Associate Professor	Either	1	3 - 6 months	
P03601	Robotics olfaction, Mechatronics, System control engineering, Computational Neuroscience, Ethology	Modeling and Robot Implementation of Insect Navigation Strategy Using Computational Neuroscience	<a href="https://sshigaki.jimdofree.com/research/">https://sshigaki.jimdofree.com/research/</a>	Shunsuke Shigaki	Assistant Professor	Ph.D.	1	2 - 6 months	
P03701	Theoretical Computer Science	Parameterized Algorithms/Complexity	See e.g. <a href="https://arxiv.org/abs/2211.04278">https://arxiv.org/abs/2211.04278</a> .	Philip Wellnitz	Assistant Professor	Ph.D.	2	4 - 6 months	At least one ESA-level paper (or better) is desirable.
P03702	Theoretical Computer Science	Fine-Grained Complexity Theory/Algorithm Design	See e.g. <a href="https://arxiv.org/abs/2305.06659">https://arxiv.org/abs/2305.06659</a> <a href="https://arxiv.org/abs/2010.09096">https://arxiv.org/abs/2010.09096</a>	Philip Wellnitz	Assistant Professor	Either	2	4 - 6 months	At least one ESA-level paper (or better) is desirable.

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<b>P03703</b>	Theoretical Computer Science/Algorithm Engineering	Fast Approximate String Matching in Practice		Philip Wellnitz	Assistant Professor	Either	2	4 - 6 months	Preference is given to longer stays; applications from strong and highly motivated Master students are welcome. For PhD students, at least one ESA-level paper (or better) is desirable.
<b>P03704</b>	Theoretical Computer Science	Theoretical Foundations of Graphical Neural Networks and related topics	See e.g. <a href="https://arxiv.org/abs/2004.06595">https://arxiv.org/abs/2004.06595</a> or <a href="https://arxiv.org/abs/2311.08988">https://arxiv.org/abs/2311.08988</a>	Philip Wellnitz	Assistant Professor	Ph.D.	2	5 - 6 months	At least one ESA-level paper (or better) is desirable.
<b>P03901</b>	Combinatorial Optimization	Research on Search Algorithms for Combinatorial Optimization		Ryo Kuroiwa	Assistant Professor	Either	2	2 - 6 months	
<b>P03902</b>	Combinatorial Optimization	Applying Optimization Solvers to Combinatorial Optimization Problems		Ryo Kuroiwa	Assistant Professor	Either	2	2 - 6 months	
<b>P03903</b>	Combinatorial Optimization	Development of Combinatorial Optimization Solvers		Ryo Kuroiwa	Assistant Professor	Either	2	2 - 6 months	
<b>P04001</b>	Program Verification	Automated Verification of Probabilistic Programs	<a href="https://group-mmm.org/~kazuki/">https://group-mmm.org/~kazuki/</a>	Kazuki Watanabe	Assistant Professor	Either	2	4 - 6 months	We aim to develop efficient, fully automated verification techniques for probabilistic programs.
<b>P04002</b>	Theoretical Computer Science	Categorical Approach for Formal Verification	<a href="https://group-mmm.org/~kazuki/">https://group-mmm.org/~kazuki/</a>	Kazuki Watanabe	Assistant Professor	Either	2	4 - 6 months	We pursue a categorical approach to formal verification, using denotational semantics and string diagrams in monoidal categories as our main tools.
<b>P04003</b>	Program Verification	Multi-objective Optimization for Program Verification	<a href="https://group-mmm.org/~kazuki/">https://group-mmm.org/~kazuki/</a>	Kazuki Watanabe	Assistant Professor	Either	2	4 - 6 months	We aim to study multi-objective properties arising in program analysis and to develop efficient algorithms based on multi-objective optimization.

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<b>2. Information Systems Architecture Science Research Division</b>									
<b>A00301</b>	Software Engineering, Formal Methods, Generative AI, AI4SE	Generative AI for Trustworthy Software Engineering	<a href="https://research.nii.ac.jp/~f-ishikawa...">https://research.nii.ac.jp/~f-ishikawa...</a>	Fuyuki Ishikawa	Associate Professor	Either	5	2 - 6 months	
<b>A00302</b>	Software Engineering, Testing, Deep Learning, Generative AI, SE4AI	Testing and Trust Exploration for AI Systems	<a href="https://research.nii.ac.jp/~f-ishikawa...">https://research.nii.ac.jp/~f-ishikawa...</a>	Fuyuki Ishikawa	Associate Professor	Either	5	2 - 6 months	
<b>A00601</b>	Wireless and Mobile Networks, Sensing, Signal Processing, AI/ML for wireless communications	Energy-efficient edge AI-based wireless networks design for Beyond 5G	<a href="https://research.nii.ac.jp/~megkaneko/">https://research.nii.ac.jp/~megkaneko/</a>	Megumi Kaneko	Professor	Either	3	4 - 6 months	Required programming skills: Matlab, Python. Basic knowledge in wireless/digital communications and signal processing is required.
<b>A00602</b>	Wireless and Mobile Networks, Sensing, Signal Processing, AI/ML for wireless communications	Integrated Sensing and Communication (ISAC)	<a href="https://research.nii.ac.jp/~megkaneko/">https://research.nii.ac.jp/~megkaneko/</a>	Megumi Kaneko	Professor	Either	3	4 - 6 months	Required programming skills: Matlab, Python. Basic knowledge in wireless/digital communications and signal processing is required.
<b>A00603</b>	Wireless and Mobile Networks, Sensing, Signal Processing, AI/ML for wireless communications	Integrated terrestrial and spatial wireless communications for 6G	<a href="https://research.nii.ac.jp/~megkaneko/">https://research.nii.ac.jp/~megkaneko/</a>	Megumi Kaneko	Professor	Either	3	4 - 6 months	Required programming skills: Matlab, Python. Basic knowledge in wireless/digital communications and signal processing is required.
<b>A01201</b>	Programming Language Theory, Program Verification	Type-Based Temporal Verification and Its Automation	<a href="https://skymountain.github.io/">https://skymountain.github.io/</a>	Taro Sekiyama	Associate Professor	Either	3	4 - 6 months	<p>This topic aims to develop an advanced type-based approach to verification of temporal properties, a class of properties about sequences of events, called traces. Real-world programs involve not only pure computation but also side effects, and many side effects have certain disciplines to be met. For example, file resources need to be opened first, and reading from and writing to them should be done before closing them, and opened files should be closed eventually. In this example, "open", "read", "write", and "close" are regarded as events on files, and the discipline of files to be met can be described as temporal properties about traces of such events. In this topic, we study 1) theory of temporal verification for higher-order programs and 2) implementation of verifiers to automate the temporal verification.</p> <p>Reference</p> <ul style="list-style-type: none"> <li>- T. Sekiyama et al. Temporal Verification with Answer-Effect Modification. POPL'23.</li> <li>- T. Sekiyama et al. Algebraic Temporal Effects. POPL'25</li> </ul>
<b>A01202</b>	Programming Language Theory, Program Verification	Advanced Type Systems for Computational Effects	<a href="https://skymountain.github.io/">https://skymountain.github.io/</a>	Taro Sekiyama	Associate Professor	Either	3	4 - 6 months	<p>Real-world programs involve side effects, such as memory, file, nondeterminism, and probability. This topic aims to study advanced type systems for uniformly verifying programs with such effects. As a means to express side effects in a uniform manner, we plan to focus on algebraic effect handlers, a programming construct able to model a variety of side effects. The expressivity of algebraic effect handlers comes from the ability to manipulate the notion of (delimited) continuations. Therefore, type systems to be studied need to effectively verify the use of continuations in programs. There are many directions and potentials to advance such type systems for algebraic effect handlers (the details will be discussed with applicants).</p> <p>Reference</p> <ul style="list-style-type: none"> <li>-F. Kawamata et al. Answer Refinement Modification. POPL'24.</li> <li>-T. Sekiyama et al. Signature restriction for polymorphic algebraic effects. ICFP'20, JFP'24.</li> <li>- T. Yoshioka et al. Abstracting Effect Systems for Algebraic Effect Handlers. ICFP'24.</li> </ul>

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A01203	Programming Language Theory, Program Verification	Program Verification for Concurrency, Parallelism, and Distributed Computing	<a href="https://skymountain.github.io/">https://skymountain.github.io/</a>	Taro Sekiyama	Associate Professor	Either	3	4 - 6 months	Concurrency, parallelism, and distributed computing are techniques to distribute the computation over multiple processes or agents that interact with each other. They are fundamental to process big data or a large number of queries, but, on the other hand, they also make the systems complex, which hinders understanding and reasoning about the systems. The aim of this topic is to study a fundamental computational model of concurrent, parallel, or distributed systems and to develop verification techniques based on it. This is at an early stage of research, but there are a number of open questions worth exploring.
A01204	Program Verification, Program Logics	Program Verification of System Software	<a href="https://skymountain.github.io/">https://skymountain.github.io/</a>	Taro Sekiyama	Associate Professor	Either	3	4 - 6 months	This topic aims to study program logics for verifying system software, such as firmware, hypervisor, and OS. Unlike user applications, these systems rely on specific features such as exception handling and CPU-specific instructions. Successful candidates will study program logics—especially, separation logic—to directly verify system code with such features. Furthermore, the advanced topics include applications to security verification, verification of software stacks, and bridging higher- and lower-level specifications.  Reference - Deep Specifications and Certified Abstraction Layers. Ronghui Gu, et al. POPL'15.
A01701	Theoretical Computer Science	Categorical Foundation of Model Checking	<a href="https://group-mmm.org/~ichiro/">https://group-mmm.org/~ichiro/</a>	Ichiro Hasuo	Professor	Either	2	3 - 6 months	Fixed-point specifications (such as in LTL and modal $\mu$ -calculus) have been conventionally studied in terms of finitary and combinatory structures (automata, games, etc.). These observations are recently being transferred to more abstract settings, opening up algorithms and proof methods for new application domains (esp. probabilistic, metric, etc.). There are a number of research questions waiting to be answered, both theoretical and algorithmic.  References (you'll work on one line): - Fibrational line: [Komorida, Katsumata, Hu, Klin, Hasuo, LICS'19], [Komorida, Katsumata, Kupke, Rot, Hasuo, LICS'21], [Kori, Hasuo, Katsumata, CONCUR'21] - PDR line: [Kori+, CAV'22], [Kori+, CAV'23] - compositionality line: [Watanabe+, CAV'23]  ## Desired: familiarity with mathematical and abstract reasoning used in logic, lattice theory and (possibly) category theory  ## Interested? Please first consult <a href="https://group-mmm.org/eratommmsd/internship-students/">https://group-mmm.org/eratommmsd/internship-students/</a> (don't write an email to me)

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<b>A01702</b>	Theoretical Computer Science	Logical safety for automated driving	<a href="https://group-mmm.org/~ichiro/">https://group-mmm.org/~ichiro/</a>	Ichiro Hasuo	Professor	Either	2	3 - 6 months	<p>Responsibility-sensitive safety (RSS) is a recently proposed methodology for devising mathematically-guaranteed safety rules for automated driving. The candidate will work on its logical foundations and its application to various driving scenarios. The work is much like interactive theorem proving, but with unique theoretical challenges (e.g. continuous dynamics) and a hot application (automated driving).</p> <p>References: [Hasuo, Eberhart, Haydon, et al., IEEE Trans. Intelligent Vehicles, '23 (available at arXiv)] [Shalev-Shwartz, Shammah, Shashua, arXiv'17]</p> <p>Desired: familiarity with formal logic and interactive theorem proving, passion for bringing theory to practice</p> <p>Interested? Please first consult <a href="https://group-mmm.org/eratommmsd/internship-students/">https://group-mmm.org/eratommmsd/internship-students/</a> (don't write an email to me)</p>
<b>A01703</b>	Theoretical Computer Science	Logic and semantics for safe AI	<a href="https://group-mmm.org/~ichiro/">https://group-mmm.org/~ichiro/</a>	Ichiro Hasuo	Professor	Either	2	3 - 6 months	<p>We are interested in logical, semantical, and programming language techniques for safe AI. Most importantly, we will be combining discrete/symbolic/algebraic/logical structures with smooth/numeric/differentiable/fuzzy machine learning algorithms.</p> <p>References: [Zhang, Hasuo, Arcaini, CAV'19], [Hasuo, Eberhart, Haydon, et al., IEEE Trans. Intelligent Vehicles, '23 (available at arXiv)]</p> <p>Desired: familiarity with, or eagerness to learn, 1) formal logic, 2) statistical machine learning</p> <p>Interested? Please first consult <a href="https://group-mmm.org/eratommmsd/internship-students/">https://group-mmm.org/eratommmsd/internship-students/</a> (don't write an email to me)</p>
<b>A01801</b>	Computer networks	Network security measurement and analysis	<a href="http://www.flab.nii.ac.jp/internship">http://www.flab.nii.ac.jp/internship</a>	Kensuke Fukuda	Professor	Either	3	5 - 6 months	Solid programming and machine learning skills
<b>A01802</b>	Computer network	LLMs and network configuration/operation	<a href="http://www.flab.nii.ac.jp/internship">http://www.flab.nii.ac.jp/internship</a>	Kensuke Fukuda	Professor	Either	3	5 - 6 months	Solid network operation and programming skills
<b>A01803</b>	Computer network	IoT traffic anomaly detection	<a href="http://www.flab.nii.ac.jp/internship">http://www.flab.nii.ac.jp/internship</a>	Kensuke Fukuda	Professor	Either	3	5 - 6 months	Solid programming and machine learning skills

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<b>3. Digital Content and Media Sciences Research Division</b>									
<b>K00101</b>	Natural language processing	Reasoning and Representation for Natural language understanding	<a href="http://www-ai.nii.ac.jp">http://www-ai.nii.ac.jp</a>	Akiko Aizawa	Professor	Either	4	3 - 6 months	
<b>K00102</b>	Natural language processing	Deep analysis of scientific papers in the era of AI for Science	<a href="http://www-ai.nii.ac.jp">http://www-ai.nii.ac.jp</a>	Akiko Aizawa	Professor	Either	4	3 - 6 months	
<b>K00401</b>	Education Science	Enhancing Cybersecurity Awareness with Adaptive Gamification	<a href="http://research.nii.ac.jp/~andres/official/intern2026_ON_SITE_topic_1.htm">http://research.nii.ac.jp/~andres/official/intern2026_ON_SITE_topic_1.htm</a>	Frederic ANDRES	Associate Professor	Either	5	3 - 6 months	cooperation with AIT (Thailand) and Sorbonne University (France)
<b>K00402</b>	Applied Mathematics	Studying Random Functions in AI	<a href="http://research.nii.ac.jp/~andres/official/intern2026_ON_SITE_topic_2.htm">http://research.nii.ac.jp/~andres/official/intern2026_ON_SITE_topic_2.htm</a>	Frederic ANDRES	Associate Professor	Either	5	6 months	Collaboration with British University of Egypt
<b>K00403</b>	Data Science	Ontology-Driven AI Learning Service	<a href="http://research.nii.ac.jp/~andres/official/intern2026_ON_SITE_topic_3.htm">http://research.nii.ac.jp/~andres/official/intern2026_ON_SITE_topic_3.htm</a>	Frederic ANDRES	Associate Professor	Either	5	6 months	cooperation with the CNRS French Laboratory
<b>K00404</b>	Molecular biology	GeoPharma3D: Customizable Geometric Deep Reinforcement Learning for Precision Pharmacotherapy	<a href="http://research.nii.ac.jp/~andres/official/intern2026_ON_SITE_topic_4.htm">http://research.nii.ac.jp/~andres/official/intern2026_ON_SITE_topic_4.htm</a>	Frederic ANDRES	Associate Professor	Either	5	6 months	cooperation with the Japanese National Institute of Health Sciences (NIHS) , The British University in Egypt, and the University of Nebraska at Omaha and IRISA
<b>K00405</b>	Data Science	Belief-Driven Reinforcement Learning for Hazard Prediction, Analysis, and Gamified Risk Awareness	<a href="http://research.nii.ac.jp/~andres/official/intern2026_ON_SITE_topic_5.htm">http://research.nii.ac.jp/~andres/official/intern2026_ON_SITE_topic_5.htm</a>	Frederic ANDRES	Associate Professor	Either	5	3 - 6 months	Cooperation with IRISA Lab (France) and AIT (Thailand)
<b>K00406</b>	Data Science	CiboLingua Revolution: The FusionFormer Challenge for Next-Generation Cooking Language Creation	<a href="http://research.nii.ac.jp/~andres/official/intern2026_ON_SITE_topic_6.htm">http://research.nii.ac.jp/~andres/official/intern2026_ON_SITE_topic_6.htm</a>	Frederic ANDRES	Associate Professor	Either	5	6 months	Cooperation with CRWB project
<b>K00407</b>	Automation Control	Carbon-Conscious Production PLANning (C2PLAN)	<a href="http://research.nii.ac.jp/~andres/official/intern2025_ON_SITE_topic_7.htm">http://research.nii.ac.jp/~andres/official/intern2025_ON_SITE_topic_7.htm</a>	Frederic ANDRES	Associate Professor	Either	5	6 months	Cooperation with IRISA and Osaka University
<b>K00501</b>	3D Computer Vision, 3D Computer Graphics	1) 3D Computer Vision Algorithms (e.g., Photometric Stereo, Feedforward 3D Reconstruction Model, NeRF/3DGS and so on)2) 3D Computer Vision on 360 degree images (Joint research with University of Tokyo)3) Auroral 3D Reconstruction (Joint resaerch with National Institute of Polar Research)4) Others related to Computer Vision	<a href="https://satoshi-ikehata.github.io/">https://satoshi-ikehata.github.io/</a>	Satoshi Ikehata	Associate Professor	Either	3	3 - 6 months	Please visit my website for details on possible research topics, the internal contact deadline, and the interview request form (Please refrain from sending an email). Desired candidates: - Excellent scientific communication abilities - Strong AI programming skills - Ability to read and write academic papers - Research experience in machine learning and/or computer vision  Candidates with publications at top AI conferences such as CVPR, ICCV, ECCV, NeurIPS, ICLR, ICML, or AAAI are highly preferred. Highly motivated students without publications who intend to submit papers to these conferences are also very welcome!
<b>K01001</b>	Digital Humanities	Machine learning for image processing (esp. character recognition), geographic information, linked data, metadata management, and data infrastructure for cultural big data	<a href="https://agora.ex.nii.ac.jp/~kitamoto....">https://agora.ex.nii.ac.jp/~kitamoto....</a>	Asanobu Kitamoto	Professor	Either	4	3 - 6 months	Programming skills are required, and collaboration with domain experts is requested for an interdisciplinary theme.
<b>K01002</b>	Earth Environmental Informatics	Big data analytics (esp. image processing, remote sensing, and machine learning) for solving environmental and societal problems	<a href="https://agora.ex.nii.ac.jp/~kitamoto....">https://agora.ex.nii.ac.jp/~kitamoto....</a>	Asanobu Kitamoto	Professor	Either	4	3 - 6 months	Programming skills are required, and collaboration with domain experts is requested for an interdisciplinary theme.
<b>K01003</b>	Crisis Informatics	Big data analytics (esp. image processing, natural language processing, and machine learning) for natural disasters and crisis	<a href="https://agora.ex.nii.ac.jp/~kitamoto....">https://agora.ex.nii.ac.jp/~kitamoto....</a>	Asanobu Kitamoto	Professor	Either	4	3 - 6 months	Programming skills are required, and collaboration with domain experts is requested for an interdisciplinary theme.
<b>K01004</b>	Open Science	Research on a new trend in science, such as open data, data citation, citizen science, and open innovation	<a href="https://agora.ex.nii.ac.jp/~kitamoto....">https://agora.ex.nii.ac.jp/~kitamoto....</a>	Asanobu Kitamoto	Professor	Either	4	3 - 6 months	Programming skills are required, and collaboration with domain experts is requested for an interdisciplinary theme.
<b>K01301</b>	Computer Vision and Computer Graphics	Computational Photography: Deep learning, Image-based rendering, Image processing, Color analysis, Spectral imaging	<a href="http://research.nii.ac.jp/~imarik/">http://research.nii.ac.jp/~imarik/</a> <a href="http://research.nii.ac.jp/pbv/">http://research.nii.ac.jp/pbv/</a>	Imari Sato	Professor	Either	3	5 - 6 months	A basic knowledge of Image Analysis and/or Machine learning, and good programming skills are required

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<b>K01302</b>	Computer Vision and Application	3D medical image analysis, Deep learning, Image processing, Color analysis, Spectral imaging	<a href="http://research.nii.ac.jp/~imark/">http://research.nii.ac.jp/~imark/</a> <a href="http://research.nii.ac.jp/pbv/">http://research.nii.ac.jp/pbv/</a>	Imari Sato	Professor	Either	3	5 - 6 months	A basic knowledge of Image Analysis and/or Machine learning, and good programming skills are required
<b>K01401</b>	Content-Based Image and Video Analysis	General image analysis topics, e.g., image semantic analysis, semantic segmentation, classification, image captioning, image retrieval, and so on. Landmark image retrieval can be considered, e.g., Google Landmark Image Retrieval <a href="https://www.kaggle.com/competitions/landmark-retrieval-2021">https://www.kaggle.com/competitions/landmark-retrieval-2021</a>	<a href="http://www.satoh-lab.nii.ac.jp/">http://www.satoh-lab.nii.ac.jp/</a>	Shin'ichi Satoh	Professor	Either	3	2 - 6 months	
<b>K01402</b>	Content-Based Image and Video Analysis	General video analysis topics, e.g., video semantic analysis, video segmentation, classification, video captioning, video retrieval, and so on. TREC Video Question Answering (VQA), can be considered. <a href="https://trecvid.nist.gov/">https://trecvid.nist.gov/</a>	<a href="http://www.satoh-lab.nii.ac.jp/">http://www.satoh-lab.nii.ac.jp/</a>	Shin'ichi Satoh	Professor	Either	3	2 - 6 months	
<b>K01601</b>	computer vision	One of the following topics (but not limited to):(1) 3D vision, (2) Human activity recognition, (3) Vision and language, (4) Object detection and segmentation from video using deep learning, (5) Image/video generation using deep learning, (6) Any proposed topic related with computer vision.	<a href="http://www.dgcv.nii.ac.jp">http://www.dgcv.nii.ac.jp</a>	Akihiro Sugimoto	Professor	Either	5	4 - 6 months	Longer duration is better. Rigorous background on mathematics is required. Strong programming skills on image processing and computer vision are also required. In the case of Master course students, highly motivated students who can stay for 6 months are preferable. Ph D students who have already publications are more preferable. Potential applicants should send your CV and research interests/proposals directly to Prof. Sugimoto before your application.
<b>K01602</b>	digital geometry	(1) Discretization model of geometric shape, (2) Discrete shape fitting to noisy integer points,(3) Any proposed topic related with digital geometry.	<a href="http://www.dgcv.nii.ac.jp">http://www.dgcv.nii.ac.jp</a>	Akihiro Sugimoto	Professor	Either	5	3 - 6 months	Rigorous background on mathematics as well as computer vision is required. In particular, strong knowledge on linear algebra, graph theory, and number theory is important requirements. Programming skills on image processing or computer vision are also required. Potential applicants should send your CV and research interests/proposals directly to Prof. Sugimoto before your application.
<b>K01701</b>	Data Mining	Recommender System	<a href="https://www.tlab.nii.ac.jp/">https://www.tlab.nii.ac.jp/</a>	Atsuhiko Takasu	Professor	Either	3	4 - 6 months	
<b>K01702</b>	Data Mining	Tabular Data Recognition and Analysis	<a href="https://www.tlab.nii.ac.jp/">https://www.tlab.nii.ac.jp/</a>	Atsuhiko Takasu	Professor	Either	3	4 - 6 months	
<b>K01703</b>	Data Mining	Sequence Data Mining	<a href="https://www.tlab.nii.ac.jp/">https://www.tlab.nii.ac.jp/</a>	Atsuhiko Takasu	Professor	Either	3	4 - 6 months	
<b>K02001</b>	Financial Time Series Forecasting	Deep Learning and Foundation Models for Stock/Crypto Market Prediction	<a href="http://research.nii.ac.jp/~prenderinger.....">http://research.nii.ac.jp/~prenderinger.....</a>	Helmut PRENDINGER	Professor	Either	3	4 - 6 months	Financial time series forecasting is inherently challenging because of non-stationarity and a low signal-to-noise ratio. We investigate the potential of Deep Learning and time series foundation models for predicting the price action of stocks and crypto assets as a basic component for swing trading strategies. Our approach builds on the concept of a "Corrective AI" system, in which a primary model forecasts market movements and a secondary, corrective model estimates the reliability of these predictions. In this way, accuracy and precision can be improved significantly. Please check the references in the link provided.

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<b>K02002</b>	Financial Time Series Forecasting	Development of Adaptive Time Series Models for Stock/Crypto Market Prediction	<a href="http://research.nii.ac.jp/~prendinger.....">http://research.nii.ac.jp/~prendinger.....</a>	Helmut PRENDINGER	Professor	Either	3	4 - 6 months	We investigate the potential of Deep Learning and time series foundation models to predict the price action of stocks and crypto assets as a core component of swing trading strategies. Financial time series exhibit challenging characteristics for learning algorithms. Distribution shifts occur when statistical properties such as the mean and variance change over time; volatility may vary dynamically (heteroskedasticity); and, in some cases, the entire distribution can shift abruptly (regime change). Because a "one-model-fits-all-markets" approach is unlikely to be robust, we aim to develop an adaptive time series model capable of adjusting to these evolving market conditions. Please check the references in the link provided.
<b>K02101</b>	Image Processing	Sign language Recognition		Mayumi Bono	Associate Professor	Either	1	2 - 6 months	
<b>K02102</b>	Natural Language Processing	Sign Language Translation		Mayumi Bono	Associate Professor	Either	1	2 - 6 months	
<b>K02301</b>	Speech processing	Voice collision: infringe the privacy of non-target speakers in voice privacy protection	Relevant but not limited to [1] For background, please check <a href="https://www.voiceprivacychallenge.org/">https://www.voiceprivacychallenge.org/</a> [2] For analysis approach that may be tried, please check Introduction of A Graduate Course in Applied Cryptography <a href="https://toc.cryptobook.us/">https://toc.cryptobook.us/</a> as well as the auditing analysis for DP: <a href="https://arxiv.org/abs/2006.07709">https://arxiv.org/abs/2006.07709</a>	Junichi Yamagishi	Professor	Ph.D.	3	4 - 6 months	Will an anonymized voice collides with unseen real speaker's voice? How to quantize it in a large population? The successful candidate should be a PhD student in speech processing, computer science, or a related discipline. Familiarity with DNN tools (e.g., Pytorch) and speech tools are preferable. Supervision teams include Dr. Xin Wang
<b>K02302</b>	Speech Processing	Automatic quality prediction of synthetic speech beyond mean opinion scores.	Relevant but not limited to[1] For background, please check <a href="https://sites.google.com/view/voicemos-challenge">https://sites.google.com/view/voicemos-challenge</a> [2] For related methods, please check <a href="https://arxiv.org/abs/2308.15203">https://arxiv.org/abs/2308.15203</a> <a href="https://arxiv.org/abs/2204.02152">https://arxiv.org/abs/2204.02152</a>	Junichi Yamagishi	Professor	Ph.D.	3	4 - 6 months	The successful candidate should be a PhD student in speech processing, machine learning, computer science, or a related discipline. He or she should have strong programming skills. Familiarity with DNN tools (e.g., Pytorch) are preferable. Supervision teams include Dr. Yusuke Yasuda.
<b>K02303</b>	Speech processing	Curating High-Quality Speech Data for Deepfake Detection	Relevant but not limited to [1] Large-scale deepfake speech detector training: <a href="https://arxiv.org/pdf/2506.21090">https://arxiv.org/pdf/2506.21090</a> [2] Data curation: <a href="https://arxiv.org/pdf/2507.00324">https://arxiv.org/pdf/2507.00324</a> [3] Data curation: <a href="https://arxiv.org/pdf/2512.18210">https://arxiv.org/pdf/2512.18210</a>	Junichi Yamagishi	Professor	Ph.D.	3	4 - 6 months	Training models on large-scale speech data is expensive. Can we enable robust deepfake detection with lower cost with data cleaning and curation methods to select high-quality training samples? The successful candidate should be a PhD student in speech processing, computer science, or a related discipline. Familiarity with DNN tools (e.g., Pytorch) and speech tools are preferable. Supervision teams include Dr. Wanying Ge
<b>K02304</b>	Speech processing	Audio Privacy Beyond Speaker Identity: Investigating Context Leakage for Trustworthy Synthetic Speech Datasets	Relevant but not limited to [1] For background, please check <a href="https://www.voiceprivacychallenge.org/">https://www.voiceprivacychallenge.org/</a> [2] Room identification from voice assistant recordings <a href="https://dl.acm.org/doi/10.5555/3578948.3578990">https://dl.acm.org/doi/10.5555/3578948.3578990</a> [3] Recording device identification from background noise <a href="https://arxiv.org/pdf/1602.05682">https://arxiv.org/pdf/1602.05682</a>	Junichi Yamagishi	Professor	Ph.D.	3	4 - 6 months	Speaker anonymization alone does not guarantee privacy in synthetic speech datasets, because audio can still leak context (e.g., recording environment and devices) that enables linking recordings or inferring sensitive situations. This project investigates such context leakage beyond speaker identity. The successful candidate should be a PhD student in speech processing, computer science, or a related discipline. Familiarity with DNN tools (e.g., Pytorch) and speech tools are preferable. Supervision teams include Dr. Zhe Zhang

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<b>K02305</b>	Music processing	Audio Effect Parameter Estimation in Music Production	Relevant literature includes, but is not limited to: Audio effect parameter estimation[1] <a href="https://arxiv.org/abs/2504.14735">https://arxiv.org/abs/2504.14735</a> [2] <a href="https://arxiv.org/abs/2502.14405">https://arxiv.org/abs/2502.14405</a> [3] <a href="https://arxiv.org/abs/2308.16177">https://arxiv.org/abs/2308.16177</a> Self-supervised audio models[4] <a href="https://arxiv.org/abs/2306.00107">https://arxiv.org/abs/2306.00107</a> [5] <a href="https://arxiv.org/abs/2207.06405">https://arxiv.org/abs/2207.06405</a>	Junichi Yamagishi	Professor	Ph.D.	3	4 - 6 months	This project focuses on developing machine learning methods to automatically estimate parameters of audio effects in music production, such as EQ, compression, and reverb. By leveraging self-supervised learning models and predefined effect presets, the approach aims to enable robust classification and regression of effect types and parameters, supporting intelligent tools for mixing, mastering, and creative sound design. The ideal candidate is a PhD student in music/audio processing, electrical engineering, computer science, or a related discipline. Experience with machine learning for audio is expected. Prior hands-on experience in music production or audio effects is a strong asset. Supervision team includes Dr. Zhe Zhang and Dr. Yigitcan Özer.
<b>K02306</b>	Image Forensics	Explainable Multimodal Reasoning for Disaster Image Forensics	For basic understanding, please find the following sources:[1] <a href="https://arxiv.org/abs/2511.00181">https://arxiv.org/abs/2511.00181</a> [2] <a href="https://arxiv.org/abs/2511.23158">https://arxiv.org/abs/2511.23158</a> [3] <a href="https://arxiv.org/pdf/2509.19841">https://arxiv.org/pdf/2509.19841</a> [4] <a href="https://arxiv.org/abs/2411.04125">https://arxiv.org/abs/2411.04125</a>	Junichi Yamagishi	Professor	Ph.D.	3	4 - 6 months	The successful candidate should be a PhD student in computer vision, image forensics, computer science, or a related discipline. He or she should have strong programming skills. Familiarity with MLLMs and DNN tools (e.g., Pytorch) are preferable. Supervision teams include Dr. Surbhi Madan.
<b>K02901</b>	Natural Language Processing	Better evaluation of large language models: evaluation methods and task design	<a href="https://penzant.net">https://penzant.net</a>	Saku Sugawara	Assistant Professor	Either	2	4 - 6 months	<a href="https://aclanthology.org/2024.emnlp-main.905/">https://aclanthology.org/2024.emnlp-main.905/</a> <a href="https://aclanthology.org/2023.emnlp-main.9/">https://aclanthology.org/2023.emnlp-main.9/</a> <a href="https://aclanthology.org/2023.acl-short.53/">https://aclanthology.org/2023.acl-short.53/</a> <a href="https://aclanthology.org/2023.findings-acl.861/">https://aclanthology.org/2023.findings-acl.861/</a>  When you reach out to me, please mention what kind of tasks or linguistic phenomena you are interested in for evaluation (e.g., by referring to recent papers).
<b>K02902</b>	Natural Language Processing	Understanding language models through the lens of human language acquisition	<a href="https://penzant.net">https://penzant.net</a>	Saku Sugawara	Assistant Professor	Either	2	4 - 6 months	<a href="https://aclanthology.org/2024.emnlp-main.1146/">https://aclanthology.org/2024.emnlp-main.1146/</a> <a href="https://aclanthology.org/2024.findings-acl.865/">https://aclanthology.org/2024.findings-acl.865/</a> <a href="https://aclanthology.org/2024.findings-acl.913/">https://aclanthology.org/2024.findings-acl.913/</a>  When you reach out to me, please mention what aspect of language modeling or human language acquisition you are interested in (e.g., by referring to recent papers).
<b>K03501</b>	Audio Processing	Physics-informed machine learning for spatial audio processing	<a href="https://www.ap.nii.ac.jp/">https://www.ap.nii.ac.jp/</a>	Shoichi Koyama	Associate Professor	Either	3	3 - 6 months	Knowledge of deep learning, signal processing, and acoustics is required. Programming skills in Python or Julia are also required. Reference: Koyama et al., IEEE SPM 2025, Ribeiro et al. IEEE/ACM TASLP 2024.
<b>K03502</b>	Audio Processing	Spatial active noise cancelling	<a href="https://www.ap.nii.ac.jp/">https://www.ap.nii.ac.jp/</a>	Shoichi Koyama	Associate Professor	Either	3	3 - 6 months	Knowledge of adaptive signal processing and acoustics is required. Programming skills in Python are also required. Reference: Koyama et al. IEEE TASLP 2021, Arikawa et al. APSIPA TSIP 2025.
<b>K03503</b>	Audio Processing	Head-related transfer function personalization for VR/AR/XR audio	<a href="https://www.ap.nii.ac.jp/">https://www.ap.nii.ac.jp/</a>	Shoichi Koyama	Associate Professor	Either	3	3 - 6 months	Knowledge of deep learning, signal processing, and acoustics is required. Programming skills in Python are also required. Reference: Niu et al. WASPAA 2025, Ito et al. IEEE OJSP 2025.

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<b>K03701</b>	Generative AI, Computer Vision, Large Language Models	One of the following topics for Computer Vision and Language Modeling: 1) Efficient architectures (e.g., auto-regressive models and diffusion models), 2) Efficient training and/or inference of the foundation models.	<a href="https://layneh.github.io/">https://layneh.github.io/</a>	Lang HUANG	Assistant Professor	Either	3	3 - 6 months	Please send me your (i) CV, (ii) a summary of your background, and (iii) a document specifying the topic(s) you want to explore with me and your initial thoughts/approaches.  Reference: <a href="https://arxiv.org/abs/2601.14671">https://arxiv.org/abs/2601.14671</a> <a href="https://arxiv.org/abs/2205.13515">https://arxiv.org/abs/2205.13515</a> <a href="https://arxiv.org/abs/1907.12273">https://arxiv.org/abs/1907.12273</a> <a href="https://arxiv.org/abs/2207.05557">https://arxiv.org/abs/2207.05557</a>
<b>K03702</b>	Generative AI, Computer Vision, Large Language Models	Data Efficient Learning for Computer Vision and Language Modeling, with its applications to visual and multi-modal understanding and generation	<a href="https://layneh.github.io/">https://layneh.github.io/</a>	Lang HUANG	Assistant Professor	Either	3	3 - 6 months	Please send me your (i) CV, (ii) a summary of your background, and (iii) a document specifying the topic(s) you want to explore with me and your initial thoughts/approaches.  Reference: <a href="https://arxiv.org/abs/2002.10319">https://arxiv.org/abs/2002.10319</a> <a href="https://arxiv.org/abs/2203.14898">https://arxiv.org/abs/2203.14898</a> <a href="https://arxiv.org/abs/2502.20008">https://arxiv.org/abs/2502.20008</a>
<b>K03703</b>	Deep Learning, Weight Space Learning	Analysis, Composition, and Generation in the Weight Space	<a href="https://layneh.github.io/">https://layneh.github.io/</a>	Lang HUANG	Assistant Professor	Either	3	3 - 6 months	This is an emergent (and exciting) topics in the Deep Learning and Machine Learning community. The candidates can refer to the Weight Space Learning workshop at ICLR for a general sense of the research: <a href="https://openreview.net/pdf?id=Bz6wEdobY7">https://openreview.net/pdf?id=Bz6wEdobY7</a> For example, we are interested in the specific applications like model merging and model generation: <a href="https://arxiv.org/pdf/2203.05482">https://arxiv.org/pdf/2203.05482</a> <a href="https://arxiv.org/abs/2402.13144">https://arxiv.org/abs/2402.13144</a>  Please send me your (i) CV, (ii) a summary of your background, and (iii) a document specifying the topic(s) you want to explore with me and your initial thoughts/approaches.

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<b>4. Information and Society Research Division</b>									
J00301	AI Security	Fake Information Generation Technology and Attack Technology Using Fake Information (e.g., Fraudulent human perception and cognition, Attacks on biometric and large-scale AI models)	<a href="https://research.nii.ac.jp/~iechizen/">https://research.nii.ac.jp/~iechizen/...</a>	Isao Echizen	Professor	Either	8	3 - 6 months	Our laboratory assigns independent research topics to all internship students and encourages them to submit papers to international conferences by the end of their internship period. Therefore, a six-month duration is desirable.
J00302	AI Security	Technology to Protect Spread of Fake Information (e.g., Authenticity judgment, Estimation of tampering area, Provenance management, Cross-modal judgment)	<a href="https://research.nii.ac.jp/~iechizen/official...">https://research.nii.ac.jp/~iechizen/official...</a>	Isao Echizen	Professor	Either	8	3 - 6 months	Our laboratory assigns independent research topics to all internship students and encourages them to submit papers to international conferences by the end of their internship period. Therefore, a six-month duration is desirable.
J00303	AI Security	Technology to Prevent Spread of Fake Information (e.g., Makes collection of training data difficult, Disables generation of fake information, Purification of training data)	<a href="https://www.colorlessgreen.info/social-ai">https://www.colorlessgreen.info/social-ai</a>	Isao Echizen	Professor	Either	8	3 - 6 months	Our laboratory assigns independent research topics to all internship students and encourages them to submit papers to international conferences by the end of their internship period. Therefore, a six-month duration is desirable.
J00304	AI Security and Social Sciences/Cognitive Sciences	Innovative Methodologies to Prevent Deception in Human Perception and Cognition (Joint research with Media Bias Group)	<a href="https://research.nii.ac.jp/~iechizen...">https://research.nii.ac.jp/~iechizen...</a> <a href="https://media-bias-research.org/">https://media-bias-research.org/</a> <a href="https://www.colorlessgreen.info/social-ai">https://www.colorlessgreen.info/social-ai</a>	Isao Echizen	Professor	Either	8	3 - 6 months	Our laboratory assigns independent research topics to all internship students and encourages them to submit papers to international conferences by the end of their internship period. Therefore, a six-month duration is desirable.
J02401	Information Retrieval, Natural Language Processing	On-Device Information Retrieval	<a href="https://www.mpkato.net/">https://www.mpkato.net/</a>	Makoto Kato	Associate Professor	Either	2	2 - 6 months	This research aims to design a novel information retrieval system that operates entirely on laptops, leveraging on-screen information to enable highly personalized retrieval. The system will integrate capabilities from both LLMs and VLMs. Applicants are expected to have a basic understanding of LLMs and VLMs.
J02402	Information Retrieval, Natural Language Processing	Information Retrieval for Scientific Documents	<a href="https://www.mpkato.net/">https://www.mpkato.net/</a>	Makoto Kato	Associate Professor	Either	2	2 - 6 months	This research aims to develop retrieval models tailored for scientific documents. LLM-based neural retrieval systems will serve as the foundation, which will be fine-tuned on domain-specific corpora such as scientific papers. Applicants are expected to have prior experience in fine-tuning language models (e.g., BERT and LLaMA) and familiarity with information retrieval tasks.