List of research topics for NII International Internship Program 2017 1st Call

No.	Research area	Title of the research	Website	Name of supervisor	Title of the supervisor	Requirements for applicants: Master's / Ph.D. Student	Total number of acceptance per supervisor	Duration : 2-6months (less than 180days)	Comments
1. Principles of Informatics Research Division									
1	Knowledge Representation and Reasoning	GPU-Based Satisfiability Testing	http://research.nii.ac.jp/il/	Katsumi Inoue	Professor	Master's or PhD students	4	3-6 months	Basic knowledge of SAT and MaxSAT solving and experience in C++ and CUDA or OpenCL and required. Contact Prof. Inoue in advance.
2	Knowledge Representation and Reasoning	Answer Set Programming	http://research.nii.ac.jp/il/	Katsumi Inoue	Professor	Master's or PhD students		3-6 months	Basic knowledge of ASP/CP/SAT and computer programming skills are required. Contact Prof. Inoue in advance.
3	Knowledge Representation and Reasoning	Tensor-Based Reasoning and Learning	http://research.nii.ac.jp/il/	Katsumi Inoue	Professor	Master's or PhD students		3-6 months	Knowledge in basic linear algebra and Octave programming skills are advantageous to tackle this subject. Contact Prof. Inoue in advance.
4	Knowledge Representation and Reasoning	Integration of Knowledge Representation and Machine Learning	http://research.nii.ac.jp/il/	Katsumi Inoue	Professor	Master's or PhD students		3-6 months	Knowledge in KR, logics, abduction, ILP, machine learning and optimization are advantageous to tackle this subject. Contact Prof. Inoue in advance.
5	Machine Learning	Learning from Interpretation Transition	http://research.nii.ac.jp/il/	Katsumi Inoue	Professor	Master's or PhD students		3-6 months	Basic knowledge of Machine Learning and/or Neural Networks are required. Additionally, knowledge in planning or model checking is useful. Contact Prof. Inoue in advance.
6	Multi-Agent Systems / Decision Making	Multi-Objective Constraint Optimization	http://research.nii.ac.jp/il/	Katsumi Inoue	Professor	Master's or PhD students		3-6 months	Basic knowledge in AI, optimization and computer programming skills are required. Contact Prof. Inoue in advance.
7	Web & Social Media analysis, Time series analysis	Modeling human activity through mining social time series	http://research.nii.ac.jp/~r-koba/en/index.html	Ryota Kobayashi	Assistant Professor	Master's or PhD students	3	4-6months	Basic knowledge of basic mathematics (Linear algebra, Calculus) are necessary. Experiences of machine learning, signal processing, and/or statistics will be appreciated. See recent papers in my website for details (Aoki et al., 2016; Kobayashi & Lamboitte 2016).
8	Computational Neuroscience, Time series analysis	Datamining in Neuroscience	http://research.nii.ac.jp/~r-koba/en/index.html	Ryota Kobayashi	Assistant Professor	Master's or PhD students		4-6months	Basic knowledge of basic mathematics (Linear algebra, Calculus) are necessary. Experiences of machine learning, signal processing, and/or statistics will be appreciated.
9	Computational Neuroscience, numerical simulation	Simulating brain dynamics	http://research.nii.ac.jp/~r-koba/en/index.html	Ryota Kobayashi	Assistant Professor	Master's or PhD students		4-6months	Basic knowledge of optimization, or simulation methods for differential equations will be necessary.
10	software verification	separation logic	http://research.nii.ac.jp/~tatsuta/index-e.html	Makoto Tatsuta	Professor	Master's or PhD students	2	2-6 months	
11	Airtificial Intelligence	Machine Learning for Advanced Driving Assistance Systems	http://ri-www.nii.ac.jp/	Ryutaro Ichise	Associate Professor	Master's or PhD students	4	3-6 months	

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12	Airtificial Intelligence	Relational Learning for Knowledge Graph / Linked Data	http://ri-www.nii.ac.jp/	Ryutaro Ichise	Associate Professor	Master's or PhD students		3-6 months	
13	Airtificial Intelligence	Data Mining for Large Scale Data	http://ri-www.nii.ac.jp/	Ryutaro Ichise	Associate Professor	Master's or PhD students		3-6 months	
14	Numerical Linear Algebra	Iterative methods, constrained least squares problems, ill-posed problems, application to optimization, etc.	http://researchmap.jp/KenHayami/?lang=english	Ken Hayami	Professor	Master's or PhD students	2	6 months	Knowledge of numerical analysis and programmming is required.
15	Inverse Problems	Inverse problem in pharamakokinetcs	http://www.nii.ac.jp/TechReports/public_html/11-002E.html	Ken Hayami	Professor	Master's or PhD students		6 months	Knowledge of numerical analysis and programmming is required.
16	Formal Language Theory and Algorithmic Learning	Algorithmic Learning of Context-Free Languages	http:;//research.nii.ac.jp/~kanazawa/publications/	Makoto Kanazawa	Associate Professor	PhD students	2	3-6 months	Familiarity with formal language theory is required.
2. Information Systems Architecture Science Research Division									
17	Self-adaptive Software	Model-driven development for self-adaptive software	http://www.honiden.nii.ac.jp/en/research/mdd-for-sas	Kenji Tei	Associate Professor	Master's or PhD students	3	2-6 months	See the web site (http://www.honiden.nii.ac.jp/en/research/mdd-for-sas)
18	Programming Languages	Design and Implementation of Domain Specific Languages for Data Exchange	http://research.nii.ac.jp/~hu http://www.prg.nii.ac.jp	Zhenjiang Hu	Professor	Master's or PhD students	4	3-6 months	Interested in DSL design and its implementation.
19	Programming	(Bidirectional) Program Debugging, Refactoring, and Optimization	http://research.nii.ac.jp/~hu http://www.prg.nii.ac.jp	Zhenjiang Hu	Professor	Master's or PhD students		3-6 months	Having experience in developing prorgamming tools.
20	Parallel Programming	High-Level Parallel Programming for Processing Big graphs	http://research.nii.ac.jp/~hu http://www.prg.nii.ac.jp	Zhenjiang Hu	Professor	Master's or PhD students		3-6 months	Having experiences of writing parallel programs
21	Software Engineering	Adaptive and Evolutionary Software Development	http://research.nii.ac.jp/~hu http://www.prg.nii.ac.jp	Zhenjiang Hu	Professor	Master's or PhD students		3-6 months	Intereted in developing practical software systems
22	Software Testing	Testing Non-testable Programs	http://researchmap.jp/nkjm/	Shin Nakajima	Professor	Master's or Ph.D students	2	2 - 6 months	Contact the supervisor for details before applying the internship program
23	Formal Methods	Refinement-based Modeling with Event-B	http://researchmap.jp/nkjm/	Shin Nakajima	Professor	Master's or Ph.D students		2 - 6 months	Contact the supervisor for details before applying the internship program
24	Formal Verification	Model-Checking of Causal Loops	http://researchmap.jp/nkjm/	Shin Nakajima	Professor	Master's or Ph.D students		2 - 6 months	Contact the supervisor for details before applying the internship program

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25	Requirements Engineering	Game-theoretic Modeling of Software Requirements	http://researchmap.jp/nkjm/	Shin Nakajima	Professor	Master's or Ph.D students		2 - 6 months	Contact the supervisor for details before applying the internship program
26	Wireless Networks and Mobile Communications	Optimization of spectrum utilization in future 5G wireless access networks	http://www.nii.ac.jp/en/faculty/architecture/kaneko_megumi/	Megumi Kaneko	Associate Professor	Master's or PhD students	3	4-6 months	Required programming skills: Matlab. Basic knowledge in signal processing and wireless/digital communications is required.
27	Wireless Networks and Mobile Communications	Energy harvesting wireless access design for M2M/IoT systems	http://www.nii.ac.jp/en/faculty/architecture/kaneko_megumi/	Megumi Kaneko	Associate Professor	Master's or PhD students		4-6 months	Required programming skills: Matlab. Basic knowledge in signal processing and wireless/digital communications is required.
28	Wireless Networks and Mobile Communications	Radio resource allocation and interference management for cloud-assisted 5G dense small cell networks	http://www.nii.ac.jp/en/faculty/architecture/kaneko_megumi/	Megumi Kaneko	Associate Professor	Master's or PhD students		4-6 months	Required programming skills: Matlab. Basic knowledge in signal processing and wireless/digital communications is required.
29	Hardware Design	Design Tool for an Asynchronous FPGA	http://www.nii.ac.jp/en/faculty/architecture/yoneda_tomohiro/	Tomohiro Yoneda	Professor	Master's or PhD students	1	6 months	
30	Programming Languages	Program sysnthesis	http://researchmap.jp/tsushima/?lang=english	Kanae Tsushima	Assistant Professor	Master's or PhD students	3	4-6 months	
31	Programming Languages	Type error debugging of functional languages	http://link.springer.com/chapter/10.1007%2F978-3-642-41582-1_12#page-1, http://www.is.ocha.ac.jp/~asai/TypeDebugger/	Kanae Tsushima	Assistant Professor	Master's or PhD students		4-6 months	Interested in developing practical software systems.
32	Programming Languages	Type error debugging using machine learning	http://researchmap.jp/tsushima/?lang=english	Kanae Tsushima	Assistant Professor	Master's or PhD students		4-6 months	Interested in programming languages and machine learning.
33	wireless networks	resource management and quality of service in wireless networks	http://klab.nii.ac.jp/	Yusheng Ji	Professor	Master or Ph.D students	4	3-6 months	Basic understanding on infrastructure-based and/or ad hoc wireless communication systems is expected
34	resilient networking	robost networking for disaster preparation and response	http://klab.nii.ac.jp/	Yusheng Ji	Professor	Master's or PhD students		3-6 months	Basic understanding of network architecture and protocols is expected, knowledage on big data analysis is preferrable
35	network architecture	future internet, ICN, SDN	http://klab.nii.ac.jp/	Yusheng Ji	Professor	Master's or PhD students		3-6 months	Understanding of internet architecture and protocols is required
36	Software Testing	Analysis and Testing of Ajax Web Applications	http://www.honiden.nii.ac.jp/en/research/ajax-testing	Shinichi Honiden	Professor	Master's or PhD students	3	2-6 months	
37	Software Testing	TestDojo: Web Service for Crowdsourced Software Testing	http://www.honiden.nii.ac.jp/en/research/test-dojo	Shinichi Honiden	Professor	Master's or PhD students		2-6 months	

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38	Gamification, Motivation	Motivational Methods for Educational Smartphone Application named WillingQuiz	http://goo.gl/xMePpN	Kazunori Sakamoto	Assistant Professor	Master's or PhD students	4	2-6 months	We welcome students who love programming and creative activities. E-mail: exkazuu@nii.ac.jp LinkedIn: http://goo.gl/em22I4
39	Machine Learning	Machine Learning for Recommending Suiatble Settings in WillingQuiz on The Basis of Psychological Measurement	http://goo.gl/xMePpN	Kazunori Sakamoto	Assistant Professor	Master's or PhD students		2-6 months	We welcome students who love programming and creative activities. E-mail: exkazuu@nii.ac.jp LinkedIn: http://goo.gl/em22I4
40	Web Scraping	Robust Web Scraping Algorithm for Extracting Body from Blog	http://goo.gl/xMePpN	Kazunori Sakamoto	Assistant Professor	Master's or PhD students		2-6 months	We welcome students who love programming and creative activities. E-mail: exkazuu@nii.ac.jp LinkedIn: http://goo.gl/em22I4
3. Digital Content and Media Sciences Research Division									
41	Media Clones	Development of methods for protecting the privacy, biological, and environmental information to prevent fake information generation.	http://www2c.comm.eng.osaka-u.ac.jp/proj/mc/eindex.html	Isao Echizen	Professor	Master's or PhD students	4	3-6months	
42	Media Clones	Verification of the capability of generating various types of media clones such as audio, visual, text, and social media derived from the fake information.	http://www2c.comm.eng.osaka-u.ac.jp/proj/mc/eindex.html	Isao Echizen	Professor	Master's or PhD students		3-6months	
43	Security	Fundamental techniques and systems for content security	http://research.nii.ac.jp/~iechizen/official/research-e.html	Isao Echizen	Professor	Master's or Ph.D Student		3-6months	
44	Privacy	Privacy-enhancing technologies for resolving trade-offs between data anonymity and utility	http://research.nii.ac.jp/~iechizen/official/research-e.html	Isao Echizen	Professor	Master's or Ph.D Student		3-6months	
45	computer vision	One of the following topics. (1) 3D vision, (2) Recognizing human activities, and (3) Gaze sensing and gaze navigation	http://www.dgcv.nii.ac.jp	Akihiro Sugimoto	Professor	Master's or Ph.D Student	5	Up to 6 months (at least 3 months; a longer period is better)	Rigorous background on mathematics is required. 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. Students who are willing to pursuit ph D at NII are preferable as well. Potential applicants should send your CV and research interests/proposals directly to Prof. Sugimoto before your application.
46	discrete geometry	(1) Discretization model of geometric shape, (2) Discrete shape fitting to noisy integer points.	http://www.dgcv.nii.ac.jp	Akihiro Sugimoto	Professor	Master's or Ph.D Student		Up to 6 months (at least 3 months)	Rigorous background on mathematics as well as computer vision is required. In particular, sufficient knowledge of linear algebra, graph theory and number theory are 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.

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47	content-based image and video analysis	video and image semantic analysis and search (esp. TRECVID LOC and AVS task. see: http://www-nlpir.nist.gov/projects/trecvid/)	http://research.nii.ac.jp/~satoh	Shin'ichi Satoh	Professor	Master's or Ph.D (Ph.D preferable)	5	more than 90 days	
48	content-based image and video analysis	identification of specific object in video and image (esp. TRECVID instance search. see: http://www-nlpir.nist.gov/projects/trecvid/)	http://research.nii.ac.jp/~satoh	Shin'ichi Satoh	Professor	Master's or Ph.D (Ph.D preferable)		more than 90 days	
49	content-based image and video analysis	Event detection and action recognition (esp. TRECVID multimedia event detection task. see: http://www-nlpir.nist.gov/projects/trecvid/)	http://research.nii.ac.jp/~satoh	Shin'ichi Satoh	Professor	Master's or Ph.D (Ph.D preferable)		more than 90 days	
50	content-based image and video analysis	Image and Video Captioning (esp. TRECVID Video-to-Text pilot task or Microsoft Video to Language Challenge: see http://ms-multimedia-challenge.com/challenge)	http://research.nii.ac.jp/~satoh	Shin'ichi Satoh	Professor	Master's or Ph.D (Ph.D preferable)		more than 90 days	
51	text mining	Text mining based on probabilistic model	http://www.ldear.nii.ac.jp/~takasu/en/	Atsuhiro Takasu	Professor	Master's or Ph.D Student	2	3-6 months	
52	Big Data	data analysis and mining methods for (sensor) big data	http://www.ldear.nii.ac.jp/~takasu/en/	Atsuhiro Takasu	Professor	Master's or Ph.D Student		3-6 months	
53	Text Media	Language technologies to assist human reading/writing	http://www-al.nii.ac.jp	Akiko Aizawa	Professor	Master's or Ph.D students	3	3-6months (6 months is preferable)	
54	Text Media	Scientific paper mining and recommendation	http://www-al.nii.ac.jp	Akiko Aizawa	Professor	Master's or Ph.D students		3-6months (6 months is preferable)	
55	Text Media	Sentence compression, summarization and generation	http://www-al.nii.ac.jp	Akiko Aizawa	Professor	Master's or Ph.D students		3-6months (6 months is preferable)	
56	Signal Processing	Graph Signal Processing for Image Representation & Analysis	http://research.nii.ac.jp/~cheung/intern.html	Gene Cheung	Associate Professor	Master's or PhD students	3	3 months minimum	math background in linear algebra, signal processing, optimization required
57	Computer Vision and Computer Graph	Computational Photography: Image-based rendering, Image processing, Color analysis, Spectral imaging	http://research.nii.ac.jp/~imarik	Imari Sato	Professor	Master's or PhD students	3	5 to 6 month	A basic knowledge of computer graphics and good programming skills are required

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58	Big data/Iot Mindflow project	Human Stress Ontology and MindFlow Apps	http://research.nii.ac.jp/~andres/official/intern2017_1.html	Frederic Andres	Associate Professor	Master's or PhD students	5	180 Days	fields of expertise: Web service/HTML apps development
59	Big Data/Cooking Recipe Benchmark	Cooking Recipe Benchmark Initiative for Recommendation Evaluation	http://research.nii.ac.jp/~andres/official/intern2017_2.html	Frederic Andres	Associate Professor	Master's or PhD students		180 Days	fields of expertise: Visual ontology, Big data IR benchmark, Food Classification
60	Agriculture Early Warning Management	Personal Obervation Collector (MyPOC)	http://research.nii.ac.jp/~andres/official/intern2017_3.html	Frederic Andres	Associate Professor	PhD students		180 Days	fields of study: Web service in mobile/sensors
61	Pedagical and didactical e-learning	Web-based WebELS Apps in Moodle environment	http://research.nii.ac.jp/~andres/official/intern2017_4.html	Frederic Andres	Associate Professor	Master's or PhD students		180 Days	fields of expertise: Web service/moodle/moodle plugins
62	Social network-based problem-solving service project	Heterogeneous adhoc Network for Skill sharing	http://research.nii.ac.jp/~andres/official/intern2017_5.html	Frederic Andres	Associate Professor	Master's or PhD students		180 Days	Collaboration with Kumamoto University and Kumamoto communities
63	Speech information processing	DNN-based expressive speech synthesis	Relevant papers include, but do not limited to, [1] Jaime Lorenzo-Trueba, Shinji Takaki, Junichi Yamagishi, A comparative study on modeling and controlling emotional acoustic parameters in neural networks based Japanese and Spanish speech synthesis, 18th SLP symposium, Dec 2016	Junichi Yamagishi	Associate Professor	PhD students	7	3-6 months	The successful candidate should be a PhD student in speech processing, computer science, engineering, linguistics, mathematics, or a related discipline. He or she should have strong programming skills and experience with statistical parametric speech synthesis. • Familiarity with software tools including HTK, HTS, SPTK, Festival, DNN tools is preferable
64	Speech information processing	Waveform generation for DNN speech synthesis	Relevant papers include, but do not limited to, [2] A Deep Auto-Encoder based Low-Dimensional Feature Extraction from FFT Spectral Envelopes for Statistical Parametric Speech Synthesis, Shinji Takaki, Junichi Yamagishi, Proc. ICASSP 2016 SP-6.7 March 2016	Junichi Yamagishi	Associate Professor	PhD students		3-6 months	The successful candidate should be a PhD student in speech processing, computer science, engineering, linguistics, mathematics, or a related discipline. He or she should have strong programming skills and experience with statistical parametric speech synthesis and signal processsing • Familiarity with software tools including HTK, HTS, SPTK, Festival, DNN tools is preferable
65	Speech information processing	Speaker adaptation for DNN speech synthesis	Relevant papers include, but do not limited to, [3] Hieu-Thi Luong, Shinji Takaki, Gustav Eje Henter, Junichi Yamagishi, "ADAPTING AND CONTROLLING DNN-BASED SPEECH SYNTHESIS USING INPUT CODES", Proc ICASSP 2017	Junichi Yamagishi	Associate Professor	PhD students		3-6 months	The successful candidate should be a PhD student in speech processing, computer science, engineering, linguistics, mathematics, or a related discipline. He or she should have strong programming skills and experience with statistical parametric speech synthesis. • Familiarity with software tools including HTK, HTS, SPTK, Festival, DNN tools is preferable

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66	Speech information processing	New DNN architectures and theory for speech synthesis	Relevant papers include, but do not limited to, [4] Xin Wang, Shinji Takaki, Junichi Yamagishi, "Investigating Very Deep Highway Networks for Parametric Speech Synthesis", 9th ISCA Workshop on Speech Synthesis (Satellite workshop after INTERSPEECH 2016) September 2016, [5] Xin Wang, Shinji Takaki, Junichi Yamagishi, "AN AUTO REGRESSIVE RECURRENT MIXTURE DENSITY NETWORK FOR PARAMETRIC SPEECH SYNTHESIS", Proc ICASSP 2017	Junichi Yamagishi	Associate Professor	PhD students		3-6 months	The successful candidate should be a PhD student in speech processing, computer science, engineering, linguistics, mathematics, or a related discipline. He or she should have strong programming skills and experience with statistical parametric speech synthesis and machine learning. • Familiarity with software tools including HTK, HTS, SPTK, Festival, DNN tools is preferable
67	Speech information processing	Natural language processing for DNN speech synthesis	Relevant papers include, but do not limited to, [6] Xin Wang, Shinji Takaki, Junichi Yamagishi, "Enhance the word vector with prosodic information for the recurrent neural network based TTS system", Interspeech 2016, Sept 2016	Junichi Yamagishi	Associate Professor	PhD students		3-6 months	The successful candidate should be a PhD student in speech processing, computer science, engineering, linguistics, mathematics, or a related discipline. He or she should have strong programming skills and experience with statistical parametric speech synthesis and natural langauge processing. • Familiarity with software tools including HTK, HTS, SPTK, Festival, DNN tools is preferable
68	Speech information processing	DNN-based automatic speaker verifications and its anti-spoofing	Relevant papers and webpage include, but do not limited to, [7] ASVspoof 2015: the First Automatic Speaker Verification Spoofing and Countermeasures Challenge, Zhizheng Wu, Tomi Kinnunen, Nicholas Evans, Junichi Yamagishi, Cemal Hanilc, Md Sahidullah Aleksandr Sizov, Interspeech 2015 2037-2041 Sept 2015 [8] http://www.spoofingchallenge.org/	Junichi Yamagishi	Associate Professor	PhD students		3-6 months	The successful candidate should be a PhD student in speech processing, computer science, engineering, linguistics, mathematics, or a related discipline. He or she should have strong programming skills. Familiarity with software tools including ALIZE, MSR identity toolbox, Sidekit, DNN tools is preferable
69	Speech information processing	Other modality or multimodality that are relevant to speech synthesis or speaker verification	Relevant papers include, but do not limited to, [9] The use of articulatory movement data in speech synthesis applications: an overview –Application of articulatory movements using machine learning algorithms–, Korin Richmond, Zhenhua Ling, Junichi Yamagishi, Acoustical Science and Technology 36(6) 1-12 Nov 2015	Junichi Yamagishi	Associate Professor	PhD students		3-6 months	Examples of the other modality and/or multimodality include audio visual synthesis/verification, automatic natural language generation, machine translation, articulatory information, and music/singing. The successful candidate should be a PhD student in speech processing, computer science, engineering, linguistics, mathematics, or a related discipline. He or she should have strong programming skills. Familiarity with relevant software tools including DNN tools is preferable
70	Multimedia Data Mining and Analysis	People activities analytics in the context of social online presences and real physical behaviours in multimedia landscape (e.g., deep learning for multimedia content recommendation, personalized venue inference, enhancing online education by leveraging social media techniques)	http://research.nii.ac.jp/~yiyu/	Yi Yu	Assistant Professor	Master's or PhD students	4	3-6months	
71	Music Information Retrieval and Its Applications	Music discovery (e.g., content-based deep learning for cold start problem in music recommendation, personalized retrieval and playlisting)	http://research.nii.ac.jp/~yiyu/	Yi Yu	Assistant Professor	Master's or PhD students		3-6months	

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72	Geometric Computer Vision	3D Reconstruction for Large-Scale Image Collections; 3D Scan Using Mobile Devices (structure-from-motion, SLAM, pose estimation, minimal problems, et al.)	http://researchmap.jp/yinqiangzheng	Yinqiang Zheng	Assistant Professor	Master's or PhD students	5	3-6 months	Students with strong mathematical and programming skills are preferred. We are aiming at publications in top venues only.
73	Photometric Computer Vision	Hyperspectral/Multispectral Image Capture/Denoising/Analysis (illumination and reflectance analysis, intrinsic image, specularity, shadow, fluorescence, et al.)	http://researchmap.jp/yinqiangzheng	Yinqiang Zheng	Assistant Professor	Master's or PhD students		3-6 months	Students with strong mathematical and programming skills are preferred. We are aiming at publications in top venues only.
74	Unmanned Aerial Systems Traffic Management (UTM) (Optimization)	Research and development of real-time algorithms for (1) en-route Conflict Detection and Resolution (CDR) among drones (centralized and decentralized), and (2) Dynamic Airspace Configuration for efficient usage of low-altitude airspace	www.siliconmountain.jp	Helmut Prendinger	Professor	Master's or PhD students	12	4-6 months	Solid programming and software engineering skills; interest to create reliable and robust software that will be deployed in the real world; interest to go to the "field" and test advanced systems in the real world. Longer stay (6 months) is preferred for good result or publication (http://research.nii.ac.jp/~prendinger/)
75	Unmanned Aerial Systems (Real-time Distributed Systems, Human-Machine Interface)	Research and development of real-time distributed system for controlling and monitoring large number of drones (Unmanned Aerial Systems: UAVs); research and development of supervisory control systems for multiple UAVs; research and development of human-machine interface for supervising UAVs	www.siliconmountain.jp	Helmut Prendinger	Professor	Master's or PhD students		4-6 months	Solid programming and software engineering skills; interest to create reliable and robust software that will be deployed in the real world; interest to go to the "field" and test advanced systems in the real world. Longer stay (6 months) is preferred for good result or publication (http://research.nii.ac.jp/~prendinger/)
76	Unmanned Aerial Vehicle (Robotics, Electronics, Embedded Systems)	Setup of custom-made drone configuration based on DJI Matrice 100 research platform, incl. flight controller, onboard processing, communications, etc.	www.siliconmountain.jp	Helmut Prendinger	Professor	Master's or PhD students		4-6 months	Solid programming in C/C++; interest in drone-related robotics
77	Deep Learning	Research and development of Deep Learning models for (1) real-time object recognition and tracking, (2) action recognition, and (3) semantic segmentation (pixel-wise labeling) with the goal of creating a "dynamic map" (DM) from the UAV perspective; DM-based services incl. advanced surveillance, security and generally, situational awareness. The system will be tested by superchip on drone. We already have several models for (1)-(3) running.	www.siliconmountain.jp	Helmut Prendinger	Professor	Master's or PhD students		4-6 months	Solid programming skills, e.g., C++ and Python. Solid background in machine learning. Longer stay (6 months) is preferred for good result and possibly a publication (http://research.nii.ac.jp/~prendinger/)
78	Digital Humanities	Machine learning for image processing (esp. character recognition), geographic and spatial information, Semantic Web for cultural heritage	http://agora.ex.nii.ac.jp/~kitamoto/education/internship/	Asanobu Kitamoto	Associate Professor	Master's or PhD students	4	3-6 months	Programming skill is required. An interdisciplinary topic needs working with domain experts.

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No.	Research area	Title of the research	Website	Name of supervisor	Title of the supervisor	Requirements for applicants: Master's / Ph.D. Student	Total number of acceptance per supervisor	Duration : 2-6months (less than 180days)	Comments
79	Earth Environmental Informatics	Big data analytics (esp. image processing, remote sensing and machine learning) for solving environmental and societal problems	http://agora.ex.nii.ac.jp/~kitamoto/education/internship/	Asanobu Kitamoto	Associate Professor	Master's or PhD students		3-6 months	Programming skill is required. An interdisciplinary topic needs working with domain experts.
80	Crisis Informatics	Big data analytics (esp. image processing, natural language processing, and machine learning) for natural disasters and crisis	http://agora.ex.nii.ac.jp/~kitamoto/education/internship/	Asanobu Kitamoto	Associate Professor	Master's or PhD students		3-6 months	Programming skill is required. An interdisciplinary topic needs working with domain experts.
81	Open Science	Citizen science, crowdsourcing, open data, data and metadata management system, scholarly information platform	http://agora.ex.nii.ac.jp/~kitamoto/education/internship/	Asanobu Kitamoto	Associate Professor	Master's or PhD students		3-6 months	Programming skill is required. An interdisciplinary topic needs working with domain experts.
82	Software Engineering (Formal Methods)	Continous Modeling and Validation of Complex Systems with Flexible Refinement	http://research.nii.ac.jp/~f-ishikawa/en/lab.html	Fuyuki Ishikawa	Associate Professor	Master's or PhD students	5	2-6 months	
83	Software Engineering (Internet of Things, Models@run.time, Self-* Systems)	Runtime Validation and Configuration of Smart Space Systems	http://research.nii.ac.jp/~f-ishikawa/en/lab.html	Fuyuki Ishikawa	Associate Professor	Master's or PhD students		2-6 months	
84	Software Engineering (Cyber-Physical Systems, Testing, Formal Methods)	Formal Methods and Intelligence for Dependable Cyber-Physicasl Systems	http://research.nii.ac.jp/~f-ishikawa/en/lab.html	Fuyuki Ishikawa	Associate Professor	Master's or PhD students		2-6 months	
4. Information and Society Research Division									
85	Interactive Information Retrieval	Understanding and Modeling User Behaviour during Complex Search Task	The current project page has not been set up, but the previous related project page is available at; http://cres.jpn.org/?FrontPage	Noriko Kando	Professor	Either Master and PhD students are fine, but priority will be given to PhD student	4	6 months	The grand target of the project is to propose a mechanism to support the users conducting complex/exploratory search tasks. As a step toward the target, several internship research tasks are prepared as following, but not limited to: 1) enhance the method to assess the "success" of complex/exploratory search outcome based on Concept map and others, 2) investigate user search bahaviour in terms of dwell time, link depth, search trail, , engagement, perceived task difficulty, cognitive task complexity, and/or outcome, 3) investigate the relationship between user's attributes such as domain expertise, task familiarity, time constraint, etc. and the search behaviour and outcomes, 4) building and/or enhancing the tools usable for the above mentioned 1) -3). Any other topic related to this research direction shall be considered.

List of research topics for NII International Internship Program 2017 1st Call

No.	Research area	Title of the research	Website	Name of supervisor	Title of the supervisor	Requirements for applicants: Master's / Ph.D. Student	Total number of acceptance per supervisor	Duration : 2-6months (less than 180days)	Comments
86	Interactive Information Retrieval	Investigating what/how Concept map captures each user's search outcome and its influence on the search process		Noriko Kando	Professor	Either Master and PhD students		6 months	Concept map is originally used in the educational science, but it has been used as a tool to capther each user's knowledge structure change during complex search task such as "search as learning. This project investigate the role of the concept map in the search process through the experiments
87	Complex Question Answering and/or Text Summarization	Evaluating System-created Essaies and/or summaries	http://research.nii.ac.jp/qalab/	Noriko Kando	Professor	Either Master and PhD students		6 months	Using the system created essays at NTCIR's QA Lab shared task series, this project aims 1) survey of the exisiting automatic evaluation methodologies for essay writing,, text generation, summarization, and complex QA,; 2) propose and evaluate automatic evaluation methodologies of essaies and summarization using empirical data sets.
5. Management and Outside Collaboration on R&D									
88	Databases / Data Mining	Similarity Search and Intrinsic Dimensionality	http://zephyr.nii.ac.jp/houlelab/downloads/proj-simsearch.pdf	Michael Houle	Visiting Professor	Master's or PhD students	6	3-6 months	Priority given to PhD students, and for internships of 5-6 months.
89	Data Mining	Outlier Detection and Data Dimensionality	http://zephyr.nii.ac.jp/houlelab/downloads/proj-outlier.pdf	Michael Houle	Visiting Professor	Master's or PhD students		3-6 months	Priority given to PhD students, and for internships of 5-6 months.
90	Data Mining	Clustering and Data Dimensionality	http://zephyr.nii.ac.jp/houlelab/downloads/proj-clust.pdf	Michael Houle	Visiting Professor	Master's or PhD students		3-6 months	Priority given to PhD students, and for internships of 5-6 months.
91	Data Mining / Machine Learning	Unsupervised Feature Selection	http://zephyr.nii.ac.jp/houlelab/downloads/proj-features.pdf	Michael Houle	Visiting Professor	Master's or PhD students		3-6 months	Priority given to PhD students, and for internships of 5-6 months.
92	Data Mining / Machine Learning	KNN Classification and Applications	http://zephyr.nii.ac.jp/houlelab/downloads/proj-classification.pdf	Michael Houle	Visiting Professor	Master's or PhD students		3-6 months	Priority given to PhD students, and for internships of 5-6 months.
93	Theory (Algorithmics, Statistics, Machine Learning)	Theory of Intrinsic Dimensionality	http://zephyr.nii.ac.jp/houlelab/downloads/proj-id-theory.pdf	Michael Houle	Visiting Professor	Master's or PhD students		3-6 months	Priority given to PhD students, and for internships of 5-6 months.
1. Principles of Informatics Research Division									
94	Artificial Intelligence / Web Informatics	Semantic Web / Linked Data / Linked Open Data	http://lod.ac http://www-kasm.nii.ac.jp/	Hideaki Takeda	Professor	Master's or PhD students	3	3-6months	
95	Artificial Intelligence / Web Informatics	Social Web / Social Media Analysis / Social Network Analysis	http://www-kasm.nii.ac.jp/	Hideaki Takeda	Professor	Master's or PhD students		3-6months	
96	Artificial Intelligence	Articiial Social Intelligence: building intelligence systems with social knowledge and social interaction		Hideaki Takeda	Professor	Master's or PhD students		3-6months	

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No.	Research area	Title of the research	Website	Name of supervisor	Title of the supervisor	Requirements for applicants: Master's / Ph.D. Student	Total number of acceptance per supervisor	Duration : 2-6months (less than 180days)	Comments
97	Intelligent Robotics	Integration of Robot Simulation and Social Agent Simulation http://www.sigverse.org/	http://www.sigverse.org/	Tetsunari Inamura	Associate Professor	Master's or PhD students	3	3-6 months	Requred skill: writing software in C++
98	Intelligent Robotics	Concept Acquisition through interaction between Humans and Robots		Tetsunari Inamura	Associate Professor	Master's or PhD students		3-6 months	Requred skill: writing software in C++
99	Cognitive Science	Research on sense of agency/ownership using immersive virtual reality		Tetsunari Inamura	Associate Professor	Master's or PhD students		3-6 months	