

2018年度 岩手県立大学 海外の学会における発表論文の概要

Affiliation Title Name 所属 職 氏名	Academic Society 学会名	Country 開催国	Period 会期	Abstract 概要
Center for the Advancement of Higher Education Professor Wenjing Liu-Wuerz  高等教育推進センター 教授 劉 文靜	The 4th Hebei(China) International Think Tank Forum  第4回 河北省(中国) シンクタンク国際 フォーラム	China  中国	2018.5.21 ~5.25	<p><b>Title</b> Young Japanese Farmers – New Hope for a Declining Agricultural Sector:A Case Study in Kitakami, Iwate Prefecture, Japan</p> <p><b>Abstract</b> The patent decline of the role played by agriculture in the modern Japanese economy is characterized by agriculture’s smaller percentage of the GDP with a concomitant fall in earnings for individual farmers, lower rates of food self-sufficiency, an ageing rural population which the shrinking number of young farmers is unable to replace, and finally the depopulation of the countryside leading in some areas to the unravelling of the fabric of rural society. Consequently, revitalizing the agricultural sector by boosting income for individual farmers, increasing food self-sufficiency and putting a brake on the depopulation of the countryside have been prioritized. This paper reports on the implementation of the central government’s new agricultural policies by local authorities who have to take into consideration the special features of the locality. Three case studies were carried out in Kitakami, Iwate Prefecture, in the Tohoku ( North East ) area of Japan. The bulk of this research was carried out 2014–2015 under the auspices of the Kitakami Government. Some supplemental data from 2017 and 2018 have been added. The three farming households chosen for this paper are representative of a much larger number of case studies.</p>
Research and Regional Cooperation Office Professor Yoshitaka Shibata  研究・地域連携本部 特任教授 柴田 義孝	The 32nd IEEE International Conference on Advanced Information Networking and Applications (IEEE AINA-2018)  第32回先進的情報 ネットワーキングとそ の応用に関する国際 会議	Republic of Poland  ポーランド	2018.5.16 ~5.18	<p><b>Title</b> A New V2X Communication System to Realize Long Distance and Large Data Transmission by N-Wavelength Wireless Cognitive Network</p> <p><b>Abstract</b> In V2X communication on the actual road, both the length of communication distance and the total size of data transmission must be maximized at the same time when vehicle are running on the road. The conventional single wireless communication such as Wi-Fi, IEEE802.11p, LPWA, cannot satisfy those conditions at the same time. In order to resolve such problems, N-wavelength wireless communication method is newly introduced in our research. Multiple standard wireless networks with different wavelengths are integrated to organize a cognitive wireless communication. The best link of the cognitive wireless is determined by considering their RSSI values. In order to verify the effects of our proposed method, a prototype system is constructed at the actual road and tested the performance, such as communication distance and total transmission data. Through the performance evaluation, the effects of our suggest method could be verified over the single network.</p>
Faculty of Software and Information Science Professor Akio Doi  ソフトウェア情報学部 教授 土井 章男	The 32nd IEEE International Conference on Advanced Information Networking and Applications (IEEE AINA-2018)  第32回先進的情報 ネットワーキングとそ の応用に関する国際 会議	Republic of Poland  ポーランド	2018.5.16 ~5.18	<p><b>Title</b> Training System Using a Force Feedback Device for Acupuncture Treatment</p> <p><b>Abstract</b> A lot of people who wish to become professional acupuncturists lack practical training in performing actual acupuncture because of anxiety about deep needling, lack of practical training time, and so on. In order to solve this problem, we are developing an acupuncture training system based on a force feedback device, called Acupuncture Trainer (ACT).</p>

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Faculty of Software and Information Science Professor Hamido FUJITA ソフトウェア情報学部 教授 藤田 ハミド	IEEE 12th International Symposium on Applied Computational Intelligence and Informatics IEEE 第12回 応用計算知能と情報学に関する国際シンポジウム	Romania ルーマニア	2018.5.17 ~5.19	<p><b>Title</b> Challenges on Data Analytics for Risk Predictions based on Deep and Ensemble Learning</p> <p><b>Abstract</b> Discovering patterns from big data attracts a lot of attention due to its importance in discovering accurate patterns and features that are used in predictions of decision making. The challenges in big data are the high dimensionality and complexity in data representation and analytics especially for on-line feature selection. Granular computing and feature selection on data streams are among the challenge to deal with big data analytics that is used for Decision making. We will discuss these challenges in this talk and provide new projection on ensemble and deep learning techniques for on-line health care risk prediction.</p>
Faculty of Software and Information Science Professor Hamido FUJITA ソフトウェア情報学部 教授 藤田 ハミド	CGCKD Computing Granular and Knowledge Discovery (粒計算与知识发现学术会议) グラヌラーコンピュテーティングと知識発見に関する会議 2018	China 中国	2018.8.10 ~8.12	<p><b>Title</b> Research challenges on Granular Computing: Data Analytics and Uncertainty</p> <p><b>Abstract</b> Discovering patterns from big data attracts a lot of attention due to its importance in discovering accurate patterns and features that are used in predictions of decision making. Pattern recognition is machine learning related challenges in big data analytics and is of high dimensionality and complexity in data representation. Granular computing and feature selection are among the challenge to deal with big data analytics that is used for accurate and secure pattern recognition. We will discuss these challenges in this talk and provide new projection for health care risk prediction. In decision making most approaches are taking into account objective criteria, however the subjective correlation among different ensembles provided as preference utility is necessary to be presented to provide confidence preference additive among it reducing ambiguity and produce better utility preferences measurement for good quality predictions.</p>
Miyako Junior College Associate professor Kaori Saito 宮古短期大学部 准教授 齋藤 香織	24th International Conference on Difference Equations and Applications 第24回国際差分方程式学会	Germany ドイツ	2018.5.21 ~5.25	<p><b>Title</b> Periodic solutions in a gross-substitute discrete dynamical system</p> <p><b>Abstract</b> We follow Walras's idea and assume existence of central clearing house which gathers each transaction sectors. And then, we premise of tatonnement processes that transactions established as a result of price adjustment under fair rules by auctioneer who is the incarnation of the market. In this study, we shall consider the existence of asymptotically periodic solutions of a gross-substitute discrete system, which appear as tatonnement processes of mathematical economic models by using uniformly stable and the properties of a gross-substitute discrete system.</p>
Faculty of Software and Information Science Professor Hamido FUJITA ソフトウェア情報学部 教授 藤田 ハミド	International Joint Conference on Rough Sets (IJCRS2018) ラフ集合に関する国際合同会議	Vietnam ベトナム	2018.8.20 ~8.24	<p><b>Title</b> Challenges Machine Learning Techniques on Data Analytics for Uncertainty based Risk Predictions</p> <p><b>Abstract</b> Subjective Analysis of Price Herd Using Dominance Rough Set Induction: Case Study of Solar Companies Herd behavior depends on subjectivity and objectivity combination. Usually the former over controls the latter and makes a special distinction from others. Especially, herd could regard itself as objective thus sacrificing all differences. Getting insight of the subjectivity appears more and more important in economics. However, the combination of subjectivity and objectivity varies with time evolution. To illustrate subjective analysis, we propose an inferential model to distinguish special enterprises from price herds. It assumes public finance as intrinsic self of subjectivity and the herding behavior as objective expectation of majority then identifies subjective actions.</p>

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Faculty of Software and Information Science Professor Hamido FUJITA  ソフトウェア情報学部 教授 藤田 ハミド	THE 17TH INTERNATIONAL CONFERENCE ON INTELLIGENT SOFTWARE METHODOLOGIES, TOOLS, AND TECHNIQUES  第17回インテリジェン トソフトウェアの方法 論、ツール、技術に関 する国際会議	Spain  スペイン	2018.9.26 ~9.28	<p><b>Title</b> MINDO: Multivariate normal distribution based over-sampling for binary classification</p> <p><b>Abstract</b> Datasets that the number of instances of majority classes and minority classes are not equal is called imbalanced datasets. In such a dataset classification, it is difficult to apply learning algorithm. There are many unbalanced datasets in the real world, the imbalance problem is subject to research by researchers in many fields. Sampling is one way to handling the imbalance problem. Sampling technique focuses on balancing instances of majority classes and minority classes. However, with many over-sampling techniques, samples are synthesized using the distance between existing samples without using the correlation of each attribute. In this paper, we propose Multivariate Normal Distribution based Over-sampling (MNDO) considering the correlation in the dataset. MNDO firstly calculate the correlation coefficient of each attribute of the positive class. Next, generate new samples using multivariate normal distribution. Multivariate normal distribution is calculated using two attributes with the strongest correlation. Attributes which correlation is very weak will be over-sampled using the univariate normal distribution. The proposed method uses statistics of positive class, therefore it is possible to recover the missing value that exists in the imbalance dataset. In addition, outliers can be reproduced stochastically, so more realistic samples can be generated. We used 39 imbalance datasets in the experiment. To compare with the existing method, 6 sampling methods (SMOTE, Borderline SMOTE 1, Borderline SMOTE 2, ADASYN, SMOTE-ENN, SMOTE-Tomek), 3 learning methods (SVM, Decision Tree, k-NN) and 2 scaling (Normalize, Standardize) were used. As a result of the experiment, proposed method showed excellent results for some datasets.</p>
				<p><b>Title</b> Sentence-level sentiment analysis using feature vectors from word embeddings</p> <p><b>Abstract</b> Word2vec have been proven to facilitate various NLP tasks. We suppose that the vector space of word2vec can be divided into positive and negative. Hence, word2vec is applicable to Sentiment Analysis tasks. In this paper, we proposed supervised approach for Sentence-level Sentiment Analysis. We utilize pre trained Word Embeddings to extract features from Sentence. We train feature vectors and their polarities to make classification model. After training, we use the model for predicting new sentence's polarity. We compare our method against state of the arts and discuss about how to improve our method.</p>
				<p><b>Title</b> Automated Detection of Lung Nodules Using HOG Technique with Chest X-Ray Images</p> <p><b>Abstract</b> Lung disease is a growing disease and hence needs lot of attention. It is difficult to delineate the boundary of the lung when it is imaged through X-ray due to poor resolution. Hence, computer aided diagnosis (CAD) is preferred as it assists the radiologists in efficient diagnosis. In this work, a novel supervised classification technique is proposed using histogram of oriented gradient (HOG) and neighborhood preserving embedding (NPE). Our method is evaluated using 2000 chest X-ray images and can efficiently classify normal and abnormal classes with a promising performance of 97.95% accuracy, using support vector machine (SVM) classifier.</p>

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Faculty of Policy studies Professor Hideyuki ITOH 総合政策学部 教授 伊藤 英之	Cities on Volcanoes 10 IAVCEI, 2018 国際火山都市会議10 国際火山学地球内部 協会	Italy イタリア	2018.9.2 ~9.7	<p><b>Title</b> Groundwater monitoring discharged around Iou-yama volcano, Kirishima volcanic group.</p> <p><b>Abstract</b> After 2013, the volcanic activity of the Iou-yama, Kirishima volcanic group, became active, following these activities, small phreatic eruption occurred May, 8, 2017, accompanied with small ash emission. We installed the continuous monitoring sensor of EC and temperature and began collecting groundwater samples from multiple location for continuous water chemical analysis since June 3, 2017. Currently, we are examining the correlation between volcanic activity and weather conditions.</p>
Morioka Junior College Lecturer Yoko Horiuchi 盛岡短期大学部 講師 堀内 容子	The 7th Asian Congress of Dietetics 2018 アジア栄養士会議 2018	Hong Kong 香港	2018.7.5 ~7.8	<p><b>Title</b> Development and Validity of a Food Frequency Questionnaire for School-Aged Children in Cambodia</p> <p><b>Abstract</b> We developed the FFQ based on data from a single 24-h recall method from 2,020 children, and finalized a list comprising 56 food items We tested the reproducibility by comparing the first and second FFQs administered at approximately a 6-week interval. The developed FFQ provides a potentially reliable scale to measure nutrient intake in this population.</p>
Morioka Junior College Professor Eiko HARA 盛岡短期大学部 教授 原 英子	the 7th edition of the scientific conference, "CROSSING BOUNDARIES IN CULTURE AND COMMUNICATION" 第7回学術会議 「文化とコミュニケーションにおける交錯する境界」	Romania ルーマニア	2018.5.10 ~5.11	<p><b>Title</b> Why and How do Women Begin to Play Rugby in Japan?</p> <p><b>Abstract</b> When a woman said that she likes to play sports, what kind of sports do people think of? Social dance? Yoga? Tennis? Archery? Considering sports, we recognize that there is discrimination in what we expect between males playing sports and females doing so. Rugby football is supposed to be exclusively played by men. However, in fact men and women play rugby. Why do we connect rugby with men only? I interviewed several women rugby football teams and I realized many teams have the same problems. Why and how can they recruit girls for members? I reported on the results of these researches and discuss the cases of female rugby players in Japan.</p>
Faculty of Policy Studies Associate Professor Nobuo Koida 総合政策学部 准教授 小井田 伸雄	FUR2018 効用とリスクの基礎 付けに関する学会	United Kingdom イギリス	2018.6.25 ~6.28	<p><b>Title</b> Indecisiveness, Preference ForFlexibility, And AUnique Subjective State Space</p> <p><b>Abstract</b> The objective of this study is to unify two major approaches for addressing uncertainty, namely, indecisiveness and preference for flexibility. Specifically, we assume preferences over alternatives and over menus as primitives, and axiomatize a joint representation of expected multi-utility (Dubra et al. 2004) and ordinal expected utility (DeKel et al. 2001), wherein the set of utility functions in the former is equivalent to the subjective state space in the latter. This result indicates that indecisiveness and preference for flexibility arise from the common underlying uncertainty about ex post tastes, that is, the subjective state space, albeit they may appear differently. Our key axiom is dominance consistency, which requires that the addition of an alternative to a menu strictly improves the menu evaluation if and only if the alternative is undominated by the menu. The main result can be extended to a specific class of ordinal expected utility, such as the additive representation. The relationship between the preference over alternatives and the commitment ranking, and the one-directional implications of dominance consistency, are also discussed.</p>

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Center for the Advancement of Higher Education 高等教育推進センター Associate Professor TAKAHASHI Hideya 准教授 高橋 英也 Assistant Professor EMURA Kensuke 准教授 江村 健介	The 14th Workshop on Altaic Formal Linguistics (WAFL 14) 第14回アルタイ諸語 理論言語学研究会	the United States of America 米国	2018.10.19 ~10.21	<p><b>Title</b> The Syntax of Potential Verbs in Japanese.</p> <p><b>Abstract</b> The syntax of Japanese sentences with the potential (r)are/(r)e has been the topic of numerous previous studies, most of which have been concentrated on their peculiar Case patterns. Conversely, there have never been any attempts in the literature to try to distinguish between the two morphologically distinct forms, (r)are and (r)e. Moreover, it has long been assumed in traditional Japanese linguistics as well as in generative approaches that (r)are is a single morpheme taken either as a suffix or a verb. This situation is rather surprising given the recent derivational approach to the agglutinative aspect of the verbal morphology in Japanese under the conceptions of Distributed Morphology (Marantz 1997, 2001) whose central claims are that the syntax is root-based and that each suffix is an instance of little v attached to Root. This study puts forward a novel approach to potential constructions with (r)are/(r)e, which argues that (r)are is not a single morpheme and must be decomposed into (r)ar and (r)e: the former is the realization of Voice when the external argument is suppressed or deleted (cf. Kageyama 1996), and the latter the grammaticalized verb e-ru 'get' which appears as the head of GET. We show that our analysis coupled with the conception of Radicalization (Aoyagi 2017) straightforwardly captures the dialectal variations including "ra-dropped" or "re-added" patterns in potentials.</p>
Center for the Advancement of Higher Education Associate Professor ITO Eishiro 高等教育推進センター 教授 伊東 栄志郎	International James Joyce Symposium 国際ジェイムズ・ジョ イス・シンポジウム	Belgium ベルギー	2018.6.11 ~6.16	<p><b>Title</b> Education: The 'Jesuit' Artist and The Speckled 'Bard'</p> <p><b>Abstract</b> This paper explores how the Jesuit education informed James Joyce to artistic life mainly reading A Portrait of the Artist as a Young Man that is often considered as an autobiographical novel, although Hugh Kenner explains in "Joyce's Portrait—Reconsideration" that "Stephen is a perfectly normal Joyce character." The aim of this paper is to draw a comparison between Joyce's and Yeats's education in light of their autobiographical writings. As a young man Joyce reflected himself on Stephen Dedalus, and as a middle-aged man on Leopold Bloom in various ways. Joyce was reportedly proud that he was educated at three Jesuit schools: Clongowes Wood College, Belvedere College and University College Dublin: "I began with the Jesuits and I want to end with them" (JJII 47). The greater part of A Portrait narrates how Stephen learned "how to order and to judge" at Jesuit schools, but the strain was apparently "injected the wrong way" in him as Buck Mulligan claims (U 1.209). The dominant tone of the novel is definitely Catholic in the beginning, the latter part gradually describes how Stephen fell from grace with God and kept away from Catholicism or Christianity. W. B. Yeats wrote "Autobiographies" and left the manuscripts of an unfinished autobiographical novel The Speckled Bird. Why could not Yeats complete the novel while he supposedly always kept the manuscripts at hand without destroying or publishing them? He allegedly told or wrote: "Education is not the filling of a pail but the lighting of a fire." However, his education does not seem to have been very instructive and systematic to him as the Jesuit education to Joyce.</p>
Faculty of Software and Information Science Professor Akio Doi ソフトウェア情報学部 教授 土井 章男	The 21 st International Conference on Network Based Information Systems (NBIS-2018) 第21回ネットワー クベース情報シ ステムの国際会 議	Slovakia スロバキア	2018.9.5 ~9.7	<p><b>Title</b> 3D Measurement and Modeling for Gigantic Rocks at the Sea</p> <p><b>Abstract</b> In this research, we digitally archived large rocks at the sea, which are called "Sanouiwa" in Miyako city. We conducted two types of three-dimensional (3D) measurement techniques. The first is to take pictures by using drone. The second is to use Global Navigation Satellite System (GNSS). The point cloud data was generated from the high resolution camera images by using 3D shape reconstruction software. Finally, we integrated all point cloud data, and we constructed 3D triangular model by using these point cloud data.</p>

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Faculty of Software and Information Science Professor Hamido FUJITA  ソフトウェア情報学部 教授 藤田 ハミド	The 10th Mexican Conference on Pattern Recognition (MCP2018)  第10回パターン認識に関するメキシコ会議	Mexico  メキシコ	2018.6.27 ～6.30	<p><b>Title</b> Data Analytics for Clouds Health-Care and Risk Predictions based on Ensemble Classifiers and Subjective Projection</p> <p><b>Abstract</b> Discovering patterns from big data attracts a lot of attention due to its importance in discovering accurate patterns and features that are used in predictions of decision making. The challenges in big data analytics are the high dimensionality and complexity in data representation analytics especially for on-line feature selection. Granular computing and feature selection on data streams are among the challenge to deal with big data analytics that is used for Decision making. We will discuss these challenges in this talk and provide new projection on ensemble learning for on-line health care risk prediction. In decision making most approaches are taking into account objective criteria, however the subjective correlation among different ensembles provided as preference utility is necessary to be presented to provide confidence preference additive among it reducing ambiguity and produce better utility preferences measurement for good quality predictions. Different type of data (time series, linguistic values, interval data, etc.) imposes some difficulties to data analytics due to preprocessing and normalization processes which are expensive and difficult when data sets are raw, or imbalanced. We will highlight these issues through project applied to health-care for elderly, by merging heterogeneous metrics from multi-sensing environment for providing health care predictions for active aging elderly at home. We have utilized ensemble learning as multi-classification techniques on multi-data streams using incremental learning for modified data.</p> <p>Subjectivity (i.e., service personalization) would be examined based on correlations between different contextual structures that are reflecting the framework of personal context, for example in nearest neighbor based correlation analysis fashion. Some of the attributes incompleteness also may lead to affect the approximation accuracy. Attributes with preference-ordered domain relations properties become one aspect in ordering properties in rough approximations. We outline issues on Virtual Doctor Systems, and highlights its innovation in interactions with elderly patients, also discuss these challenges in multiclass classification and decision support systems research domains. In this talk I will present the current state of art and focus it on health care risk analysis applications with examples from our experiments.</p>
Faculty of Social Welfare Lecturer HINOHARA Yumi  社会福祉学部 講師 日野原 由未	EROPA (Eastern Regional Organization for Public Administration)  行政に関するアジア・太平洋地域機関	Indonesia  インドネシア	2018.9.16 ～9.20	<p><b>Title</b> Globalisation of the Healthcare Services Sector:Employing Foreign Physicians in National Strategic Special Zones in Japan</p> <p><b>Abstract</b> This study aimed to examine the significance of and challenges associated with the international movement of healthcare service workers. This is an international trend; however, this paper mainly discusses healthcare services in Japan. In accordance with the country's provisions of Article 17 and Article 2 of the Medical Practitioners' Act, only those who have a medical licence of Japan are allowed to practice medicine in the country. In several other countries, we see the dynamics of cross-national adjustments in medical licences in progress, which facilitates an active international movement of physicians. In contrast, the medical field in Japan has maintained its strict mechanisms in that regard. With the establishment of the 'National Strategic Special Zones Law' and the amendment of a portion of the 'Special Zones for Structural Reform Law' in July 2015, however, Japan partially lifted its ban on clinical services of foreign physicians in the National Strategic Special Zones, on the basis of bilateral agreements.</p> <p>While other countries accept foreign physicians in response to shortage of doctors, Japan's move to deregulate medical services by foreign physicians in its National Strategic Special Zones is not meant to supplement a shortage of doctors in Japan. Nevertheless, this move is a response to the medical needs of foreign residents living in Japan. Modern welfare states are required to restructure their systems in order to benefit the lives of a variety of people. As such, the efforts to respond to the medical needs of foreign residents in Japan, who are increasing in number every year, are critical. The partial lifting of the ban on clinical services provided by foreign physicians reveals the significance and challenges for the Japanese society today.</p>

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Faculty of Software and Information Science Professor Hamido FUJITA ソフトウェア情報学部 教授 藤田 ハミド	The ICERA2018 International Conference on Engineering Research and Applications 2018年工学研究と応用に関する国際会議	Vitenam ベトナム	2018.12.1 ~12.2	<p><b>Title</b> Data Analytics for Clouds Health-Care and Risk Predictions based on Ensemble Classifiers and Subjective Projection</p> <p><b>Abstract</b> In decision making most approaches are taking into account objective criteria, however the subjective correlation among different ensembles provided as preference utility is necessary to be presented to provide confidence preference additive among it reducing ambiguity and produce better utility preferences measurement for good quality predictions. Most models in Decision support systems are assuming criteria as independent. Different type of data (time series, linguistic values, interval data, etc.) imposes some difficulties to data analytics due to preprocessing and normalization processes which are expensive and difficult when data sets are raw and imbalanced. We will highlight these issues though project applied to health-care for elderly, by merging heterogeneous metrics for providing health care predictions for elderly at home. We have utilized ensemble learning as multi-classification techniques on multi-data streams that collected from multi-sensing devices.</p>
Faculty of Software and Information Science Professor Goutam Chakraborty ソフトウェア情報学部 教授 ゴウタム・チャクラボル ティ	Operation Research Society. オペレーションズリ サーチ学会	India インド	2018.10.11 ~10.13	<p><b>Title</b> Applications of Scale Free Networks in Data Mining Problems – Case studies with Aftershock Prediction and Collaborative Filtering</p> <p><b>Abstract</b> Degree of nodes of predesigned networks, like power grid or PSTN (public service telephone networks), have normal distribution with a defined highest degree, primarily limited by the hardware constraints. Data or information networks, like social networks on the internet, evolve naturally without constraint (on degree or connectivity). For example, a few face-book accounts are accessed by millions whereas others by a few. The distribution of degree is exponential, with a long tail. These networks are called scale-free networks. Like social networks, very big data is evolved too. Representing data units by nodes, and their relations by links, they can be presented graphically. Though complete information may not be retained, analyzing those networks could reveal interesting insights about the data. Examples of scale-free networks are plenty: (1) scientific papers, (2) face-book accounts, (3) various web-sites on the internet, (4) tweeter accounts, etc. Such data, when represented as network, show scale-free property. In case of (1), the papers are nodes and references/co-authorship could be used as links. In case of (2), individual accounts are nodes and friendship relation is the link. In fact, many physical phenomenon occurring in nature, too, exhibit scale free properties. Scale free networks form hubs, or clusters with a few important central node/s. Between clusters, links are a few. Discovering such clusters and their centrality reveals a lot about the data, and useful for various applications. We will elaborate this aspect with a few existing works, and a few new application areas.</p>
Faculty of Policy Studies Associate Professor Nobuo Koida 総合政策学部 准教授 小井田 伸雄	EEA/ESEM2018 ヨーロッパ経済学会/ エコノメトリックソサエ ティ・ヨーロッパンミー ティング	Germany ドイツ	2018.8.27 ~8.30	<p><b>Title</b> Indecisiveness, Preference ForFlexibility, And AUnique Subjective State Space</p> <p><b>Abstract</b> The objective of this study is to unify two major approaches for addressing uncertainty,namely, indecisiveness and preference for flexibility. Specifically, we assume preferences over alternatives and over menus as primitives, and axiomatize a joint representation of expected multi-utility (Dubra et al. 2004) and ordinal expected utility (DeKel et al.2001), wherein the set of utility functions in the former is equivalent to the subjective state space in the latter. This result indicates that ndecisiveness and preference for flexibility arise from the common underlying uncertainty about ex post tastes, that is, the subjective state space, albeit they may appear differently. Our key axiom is dominance consistency, which requires that the addition of an alternative to a menu strictly improves the menu evaluation if and only if the alternative is undominated by the menu. The main result can be extended to a specific class of ordinal expected utility, such as the additive representation. The relationship between the preference over alternatives and the commitment ranking, and the one-directional implications of dominance consistency, are also discussed.</p>

Affiliation Title Name 所属 職 氏名	Academic Society 学会名	Country 開催国	Period 会期	Abstract 概要
Morioka Junior College 盛岡短期大学部  Associate Professor Yosinobu Misuda 准教授 三須田 善暢  Lecturer Kyōko Satō 講師 佐藤 恭子	The 6th International Conference of Asian Rural Sociology Association  第6回アジア農村社 会学会大会	Indonesia  インドネシア	2018.8.27 ～8.30	<b>Title</b> The Folk Craft (Mingei) Movement and Japanese Rural Society during the Syōwa Depression Period  <b>Abstract</b> Isigami hamlet (in Hatimantai City, Iwate Prefecture) is the well-known research locale of sociologist Aruga Kizaemon, who founded Japanese rural sociology. His Dōzokudan (cognate groups) theory originated from research in Isigami hamlet, which he began conducting in 1935. Thanks to this theory, he succeeded in grasping the fundamental structure of pre-WWII Japanese society. Farmers in the Tōhoku district were impoverished because of the Syōwa depression, which began in 1930. At that time, folk craft activists such as Yanagi Sōetu were cooperating with rural economic reconstruction efforts conducted by the national institute for economic research in snowy rural regions (in Sinzyō City, Yamagata Prefecture), focusing on rural folk crafts in the Tohoku district. Coincidentally, Yanagi also visited Isigami hamlet at nearly the same time when Aruga was conducting research, due to the fact that Asazawa ward, where Isigami hamlet belongs, was famous for lacquerware production. More interesting is that the French architect and designer Charlotte Perriand, who worked for the famous Le Corbusiers studio, was invited to Japan as an official industrial design advisor and traveled to the Tōhoku district with folk craft activists. Such activities has been rediscovered in recent years by architects and civil groups who are pursuing economic development projects in rural areas. In this study, we examine both the continuity and discontinuity among such folk craft movements, industrial design and rural sociology using historical materials found in the Tōhoku district (mainly in Iwate and Yamagata).
Morioka Junior College Lecturer Kyōko Satō  盛岡短期大学部 講師 佐藤 恭子	The 28th International Costume Congress  第28回国際服飾学術 会議	Taiwan  台湾	2018.8.22 ～8.23	<b>Title</b> Feminist Movements and Arts and Crafts in Early 20th Century France – Aims of the International Exhibition of Women’s Arts and Crafts  <b>Abstract</b> In late 19th century France, some including the Central Union of the Decrative Arts thought encouraging more traditional female roles at home would help invigorate French arts and crafts. Within this setting the first International Exhibition of Women’s Arts and Crafts was held, with works by women, for women, including lacework, sewing, paintings, etc. This research looks at the exposition’s efforts to both expand the social role of women’s creative work and improve female social status. Held in Cours-la-Reine in Paris from June to October, 1902, the exhibition was organized by the Fédération Féministe (represented by the multi-talented Ms. Pauline Savari). They aimed to improve women’s economic status. Exhibits included: I. Women in history, II. Women at home, III. Working women (outside work), IV. Working women (at home), V. Women in the arts, VI. Women of the stage, VII. Women in science and literature, and VIII. Women in social economy. Category IV displayed such works as woven fabrics, lacework, and fashion accessories, much praised for their beauty and practicality. Many anti-feminists at the time believed a woman’s role was at home, and while this exhibition was a feminist production, it still admires the artistic achievements of women in their homes roles, focusing on their technical skill, perseverance, and sophistication. This exposition demonstrated a moderate position within feminist philosophy, pushing for women’s greater participation in social activities while simultaneously celebrating the work women do in their homes. Together with espousing women’s diverse capabilities, the International Exhibition of Women’s Arts and Crafts further helped to prove the potential for women’s increased success in society.
Research and Regional Cooperation Division Professor Emeritus SAWAMOTO Jun  研究・地域連携本部 特任研究員 澤本 潤	22nd International Conference on Knowledge Based and Intelligent Information & Engineering Systems  第22回 知識ベース および知的情報シス テムに関する国際会 議	Serbia  セルビア	2018.9.3 ～9.5	<b>Title</b> Research on Hybrid Information Evaluation Type Watching Technology for the Improvement of QOL of the Elderly  <b>Abstract</b> The increase in living alone and old households due to aging of the society has led to a decline in the quality of life (QOL) of elderly people. How to maintain and improve the quality of life for elderly people is a pressing issue of society. We watch over the elderly from both aspects of health-related QOL and subjective QOL and work on creating a social system that realizes a safe and secure life for the elderly. In this research, we promote the health information database which holds health related information in the shared database system such as the cloud by the will of the person him/herself, and develop a method for mining various kinds of life log information and medical/care related information in a hybrid manner. In this paper, we propose a remote watching method inferring resident’s behavior related to the operation of electric appliances from the measurement of total load current of the household. We also attempt to perform hybrid data mining by combining subjective mood data and objective data with wearable sensors that can collect biological data. We aim to provide a system that brings a safe and secure life to the elderly by carrying out assessment and early detection of abnormal symptoms of them such as depression and dementia.

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Faculty of Software and Information Science Professor Goutam Chakraborty ソフトウェア情報学部 教授 ゴウタム・チャクラボル ティ	Data Mining Applications: Bioinformatics and Medical Informatics データマイニングアプリケーション、バイオインフォマティクスおよび医療情報学に関する国際会議	Korea 韓国	2018.10.26 ~10.29	<p><b>Title</b> Paradigm Shift of Data Mining – from Analysis of Contents to Relations between Data Units</p> <p><b>Abstract</b> Degree of nodes of predesigned networks, like expressways or optical networks, have normal distribution with a defined highest degree, primarily limited by the hardware constraints. Data or information networks, like social networks on the internet, evolve naturally without constraint on degree or connectivity. For example, a few face-book accounts are accessed by millions whereas others by a few. The distribution of degree is exponential, with a long tail. These networks are called scale-free networks. Like social networks, very big data is evolved too. Representing data units by nodes, and their relations by links, it can be presented graphically. Though complete information may not be retained, in its graphical representation, analyzing those networks could reveal interesting insights about the data. Examples of scale-free networks are plenty: (1) scientific papers, (2) face-book accounts, (3) various web-sites on the internet, (4) tweeter accounts, etc. Such data, when represented as network, exhibit scale-free property. In case of (1), the papers are nodes and either references or co-authorship could be used as links. In case of (2), individual accounts are nodes and friendship relation is the link. In fact, many physical phenomenon occurring in nature like gene interaction, aftershocks from a big earthquake, neuron excitation in the brain etc., exhibit scale free properties. Scale free networks form hubs, or clusters with a few important central node/s. Between adjacent clusters, links are a few. Discovering such clusters and their centrality reveals a lot about the data, and useful for various applications. We will elaborate this aspect with a few existing works, and a few new application areas we are working on.</p>
Faculty of Software and Information Science Professor Basabi CHAKRABORTY ソフトウェア情報学部 教授 バサビ・チャクラボル ティ	Data Mining Applications: Bioinformatics and Medical Informatics データマイニングアプリケーション、バイオインフォマティクスおよび医療情報学に関する国際会議	Korea 韓国	2018.10.26 ~10.29	<p><b>Title</b> New Similarity Measures for Nonlinear Time Series Analysis</p> <p><b>Abstract</b> Time series data is abundant in nature and real life. Analysis of time series data is needed in many areas of practical life ranging from medical and health related applications to biometric authentication, process industry, financial or economic predictions. The categorization of multivariate time series (MTS) data poses problem due to its dynamical nature and conventional machine learning algorithms for static data become unsuitable for time series data processing. Similarity measures are essential for classification or clustering of MTS data. Various similarity measures have been developed so far, none of them works the best for all real world applications. The most popular one being dynamic time warping (DTW) though it has a high computational cost. In this lecture, I would like to present our proposal of some new similarity measures based on multidimensional delay vector representation of time series and several modifications of DTW for increased classification accuracy with lesser computational burden. The efficiency of the proposed similarity measures in comparison with other popular measures will be discussed by simulation experiments over bench mark data sets.</p>
Faculty of Software and Information Science Professor Basabi CHAKRABORTY ソフトウェア情報学部 教授 バサビ・チャクラボル ティ	TENCON 2018 IEEE R10 地域10のプレミア国際技術会議	Korea 韓国	2018.10.28 ~10.31	<p><b>Title</b> Developing Social Information Platform for Cool Japan in Asian Countries</p> <p><b>Abstract</b> Recently, Cool Japan, expresses modern Japanese culture such as comic, fashion, technology, food and sightseeing, is getting popular all over the world. Especially, Japanese comic and fashion gained great popularity in Asian countries as one of the major contents of Cool Japan. This research proposes the social information platform of Cool Japan that targets Asian countries' people for exploring the potential market. Our platform is based on a network consisting of universities in Asia that uses the social media to collect people's thoughts and reactions. As the first step, we target Japanese fashion and comic, analyze people's sensitivity using natural language processing techniques and our original feature selection technique. Our platform aims to collect the social information about Cool Japan contents in Asia by exploring the potential markets.</p>

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Faculty of Software and Information Science Professor Goutam Chakraborty ソフトウェア情報学部 教授 ゴウタム・チャクラボル ティ	International Conference on Sensing Technology (ICST 2018) センサー技術とその 応用に関する国際会 議	Ireland アイルランド	2018.12.3 ~12.6	<b>Title</b> Proposal of a Cheap Pulse Wave Velocity (PWV) Meter Using Photoplethysmography  <b>Abstract</b> When heart pumps oxygenated blood through artery, the arterial pulse spreads the whole body through arterial tree. The rate of this pulse is the pulse rate, which is around 70 per minute. The speed at which this pulse spreads over the arterial tree is an important index to measure the stiffness of the arterial wall, which becomes stiffer as the body ages. Faster the pulse wave moves, stiffer is the artery wall. Thus, Pulse Wave Velocity (PWV) is a measure of the artery wall stiffness. In this work, we propose a cheap device to measure PWV, using Photoplethysmography sensors. Pulse wave signals, from two locations of the body, were collected, transferred to a tablet using blue-tooth communication, and analyzed. Accurate delay measurement of the pulse wave, collected at two different points, is necessary for the accuracy of PWV measurement. Through experiments, on different subjects, we have shown that the proposed system could measure PWV accurately. Keywords: Arteriosclerosis, Pulse Wave Velocity (PWV), Photoplethysmography
Faculty of Software and Information Science Professor Basabi CHAKRABORTY ソフトウェア情報学部 教授 バサビ・チャクラボル ティ	International Conference on Sensing Technology (ICST 2018) センサー技術とその 応用に関する国際会 議	Ireland アイルランド	2018.12.3 ~12.6	<b>Title</b> Gait Related Activity Based Person Authentication with Smartphone Sensors  <b>Abstract</b> Abstract—Smartphones are recently becoming more and more sophisticated with numerous applications and a large number of people are becoming habituated with their use in everyday life. With the vast use of smartphones in various routine everyday transactions, the need of secured access control is increasing as people tend to store their personal and important information in the mobile devices. The existing popular methods of securing mobile devices, pincodes or patterns, can be vulnerable if gets lost or stolen. In this work, a novel framework for user authentication technique based on human gait related activities analyzed from smartphone sensors data has been studied. Being non-intrusive and continuously available, human gait behavior analyzed from smartphone sensors data provides an opportunity of developing convenient and user friendly means of user authentication. Benchmark data sets from smartphone sensors are used for simulation experiments. It is found that activity dependent authentication method produces better accuracy than activity independent authentication. It is also found that convolutional neural networks based classification is promising compared to traditional machine learning classifiers.
Faculty of Software and Information Science Associate Professor Mitsuyoshi Horikawa ソフトウェア情報学部 准教授 堀川 三好	The 48th International Conference on Computers and Industrial Engineering (CIE 48) コンピュータとインダ ストリアル・エンジニ アリングに関する国 際会議	New Zealand ニュージーラン ド	2018.12.2 ~12.5	<b>Title</b> SMART TAG FOR INTERNET OF THINGS  <b>Abstract</b> This study was conducted to facilitate implementation of the Internet of Moving things (IoMT), which refers to sensing locations and conditions of moving things during manufacturing. Machinery and robots with installed IoT devices are useful for anomaly detection and facility maintenance related to manufacturing. Radio-frequency identification devices (RFIDs), bar codes, and QR codes are also used to control products, parts, and work-in-process because they can be introduced easily and at low cost. Nevertheless, these technologies are unsuitable for constructing sensor networks for sensing the locations and conditions of moving things during manufacturing. Therefore, this study presents a proposal for a smart tag system that enables construction of a sensor network for moving things. First, requirements for smart tags and sensor networks are defined. Then the developed prototype of smart tags is used to evaluate the positioning accuracy and sensing condition through experimentation. These results provide guidelines for introduction of the IoMT.

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Faculty of Software and Information Science Professor Hamido Fujita ソフトウェア情報学部 教授 藤田 ハミド	信息安全与农林大数据研讨会	China 中国	2018.12.20	<p><b>Title</b> Computer Aided detection for fibrillations and utters using deep convolutional neural network</p> <p><b>Abstract</b> Fibrillations and utters are serious diseases influence the normal functioning of the heart. Among the most frequently occurring heart disorders belong atrial fibrillation (Afib), atrial utter (Afl), and ventricular fibrillation (Vfib). Nowadays, heart failures are mostly detected by electrocardiogram (ECG) device by examining the signal transferred from electrodes placed on the human body to the output display. The signal is examined by professional health personnel, who are looking for an obvious pattern representing the normal or abnormal rhythm of the heart. Nevertheless, information from ECG can be distorted by noise on data transmission. Moreover, problematic pattern does not have to be so much different from normal and it can be difficult to recognize them just by human eye even by an expert in the field. An automated computer-aided diagnosis (CAD) is an approach to make decision support for elimination of these lacks. For early diagnosis, CAD tool should work in like real-time system without big time consuming and dependency on data and measuring differences of each device. This paper proposes a novel approach of a CAD system to the detection of fibrillations and utters by our 8-layer deep convolutional neural network. Proposed model requires only basic data normalization without preprocessing and feature extraction from raw ECG samples.</p>
Faculty of Software and Information Science, Lecturer Akimasa Suzuki ソフトウェア情報学部 講師 鈴木 彰真	25th ITS World Congress 第25回ITSワールドコングレス	Denmark デンマーク	2018.9.17 ~9.21	<p><b>Title</b> Notification of Hazards Around a Vehicle Using Seat Actuators</p> <p><b>Abstract</b> This paper presents an effective haptic notification system to support safe car driving by installing vibration alerts into a driving seat. While many automakers provide useful side and rear collision warning systems with sound alarms or visual monitors, the addition of similar notifications could confuse the driver because they already have to be aware of many visual targets including mirrors, monitors and environmental sounds. We therefore propose a notification system that uses seat actuators to create haptic sensations around the driver's buttocks. We evaluate the direction and distance resolution and robustness against road conditions. We also conduct experiments to determine whether drivers can discriminate between vibration patterns on their buttocks to identify the type of obstacle or hazard, such as a pedestrian, vehicle or motorcycle. The results indicate high potential of the haptic sensation system to notify the driver of obstacles, for which most effective in the blind spot.</p>
Faculty of Software and Information Science Associate Professor David Ramamonjisoa ソフトウェア情報学部 准教授 ダビド ラمامジスア	International Conference on Mathematics and Applications at Mahidol University (ICMA-MU) 2018 数学と応用の国際学会	Kingdom of Thailand タイ	2018.12.16 ~12.18	<p><b>Title</b> The Calculus Behind Learning in DNNs revisited</p> <p><b>Abstract</b> Artificial Neural Networks (ANNs) are currently very active in the development of the machine learning and control systems. Deep Neural Networks (DNNs) are the ANNs using multiple hidden layers of units between the input and output layers. They are mainly structured with multi-layered, convoluted or recurrent neural networks. The mathematical technique to train those neural networks is the gradient descent. Backpropagation is an optimization technique for implementing the gradient descent and proven to be very fast. In terms of calculus, it is a recursive application of the chain rule along a computational graph to compute the gradient of all parameters and intermediate outputs in forward and backward activations. The practical implementation of this technique for the DNNs and large datasets is the Stochastic Gradient Descent (SGD) which introduces the minibatch or random-walk in the training data by adding the hyperparameters minibatch size, learning rate and number of training iteration. There is a known problem called vanishing gradient in the backpropagation algorithm on DNNs where the input and first layers weights don't change and the gradients are very small. A solution to the vanishing gradient problem is an appropriate activation function such as the rectified linear unit (ReLU) instead of a sigmoid function. In this paper, we present in details those equations and the algorithm for implementing into program code. It will demystify the magical result of the machine learning program and allow machine learning with DNNs more open rather than a blackbox as in biological systems.</p>

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Faculty of Software and Information Science Professor Goutam Chakraborty ソフトウェア情報学部 教授 ゴウタム・チャクラボル ティ	International Conference on Innovations in Computer Science (ICICS-2018) イノベーションinコンピュータサイエンスに関する国際会議	India インド	2018.12.21 ~12.22	<p><b>Title</b> Efficient Mining of Large Data –Based on the Analysis of Relations between Data Units</p> <p><b>Abstract</b> Due to cheap storage, high performance computing, and wide-band communication infrastructure, evolution of data is possible and is available for analysis. As the data grows to big-data, analysis based on content of data units, based on machine learning techniques, does not scale well. When data units are represented by nodes, and relation between data units represented as links, they form a special type of networks, called scale free network or small world network (SWN). As real world data generates, new data nodes are connected based on the principle of preferential attachment. SWN (Small World Network) forms communities of very small diameter, around a few central nodes important within the communities. SWN does not retain all information of the data set. Yet, detecting communities and identifying central nodes in each community, leads to important knowledge about the data. Depending on goal, node and link definitions is needed. Application areas are wide, like Sociology, Earth Science, Recommendation systems, Gene interaction network. Keywords: Scale-free networks, Earthquake aftershock prediction, Converting utility matrix to network, clustering of sparse utility matrix, Collaborative filtering,</p>
Faculty of Software and Information Science Professor Basabi CHAKRABORTY ソフトウェア情報学部 教授 バサビ・チャクラボル ティ	IEEE ANTS 2018 高度ネットワークと電気通信システムに関する国際会議	India インド	2018.12.16 ~12.19	<p><b>Title</b> Role of Efficient Similarity Measures for Time Series Data Mining</p> <p><b>Abstract</b> Mining of time series data is needed in many areas of practical life ranging from medical and health related applications to biometric authentication, process industry, financial or economic predictions. The categorization of multivariate time series (MTS) data poses problem due to its dynamical nature and conventional machine learning algorithms for static data become unsuitable for time series classification or clustering. Similarity measures are essential for classification or clustering of MTS data. Various similarity measures have been developed so far, none of them works the best for all real world applications. The most popular one being dynamic time warping (DTW) though it has a high computational cost. In this lecture, I would like to present our proposal of some new similarity measures based on multidimensional delay vector representation of time series and several modifications of DTW for increased classification accuracy with lesser computational burden. The efficiency of the proposed similarity measures in comparison with other popular measures will be discussed by simulation experiments over bench mark data sets. I would also like to discuss applications of the new measures in different real life problems of pattern recognition.</p>
Faculty of Software and Information Science Professor Basabi CHAKRABORTY ソフトウェア情報学部 教授 バサビ・チャクラボル ティ	ICICS 2018 コンピュータ科学の革新に関する国際会議	India インド	2018.12.21 ~12.22	<p><b>Title</b> Efficient Similarity Measures for Time Series Classification</p> <p><b>Abstract</b> Analysis of time series data is needed in many areas of practical life ranging from medical and health related applications to biometric authentication, process industry, financial or economic predictions. The categorization of multivariate time series (MTS) data poses problem due to its dynamical nature and conventional machine learning algorithms for static data become unsuitable for time series classification. Similarity measures are essential for classification or clustering of MTS data. Various similarity measures have been developed so far, none of them works the best for all real world applications. In this lecture, I would like to present our proposal of some new similarity measures based on multidimensional delay vector representation of time series and several modifications of DTW for increased classification accuracy with lesser computational burden. The efficiency of the proposed similarity measures in comparison with other popular measures will be discussed by simulation experiments over bench mark data sets.</p>

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Faculty of Software and Information Science Professor Yoshitoshi Murata  ソフトウェア情報学部 教授 村田 嘉利	International Academy, Research, and Industry Association (IARIA)  国際学術・研究・産業団体	Greece  ギリシャ	2019.2.24 ~2.28	<p><b>Title</b> Single Camera 3D Human Pose Estimation for Tele-rehabilitation</p> <p><b>Abstract</b> The need of using advanced remote devices to promote effective self-management of rehabilitation has rapidly grown in developed countries. The widely spread cameraequipped mobile devices and Internet of things (IoT) have been expected to deliver professional services by connecting clinician to client for assessment and consultation. This study proposes an IoT-based tele-rehabilitation framework using a single camera to observe the body joints of the client in threedimensional (3D) space on performing activities of daily living (ADL). Our experiments show that the proposed framework is capable to measure joint and orientation angles of elbow and knee comparable with the measurements using the Kinect. A waterproof camera was used to show that the proposed system can be extended to do the joint measurements during aquatic therapy and fitness pools.</p>
Faculty of Nursing Lecturer Shizuko Angerhofer  看護学部 講師 アンガホッフア 司寿子	8th World Congress on Women's Mental Health (International Association For Women's Mental Health)  第8回ウィメンズメンタルヘルス国際学会学術集会	France  フランス	2019.3.5 ~3.8	<p><b>Title</b> Self-Perceived Probability of Pregnancy and Health-Related Quality of Life Among Employed Married Women Who Wish to Have Children</p> <p><b>Abstract</b> The purpose of this study is to explore the relationship between mental health QOL and self-perceived perception of the probabilities of pregnancy among employed married-women in their 30's. An online survey was conducted of 497 employed married women aged 30 to 39 years old in Japan. The participants were screened with question items asking if they plan to have children. The questionnaire included items, such as asking about the number of children they plan to have, employment status, self-perceived probability of pregnancy, and Health-Related Quality of Life (HRQOL) SF-8TM score. The data was analyzed statistically. The average age of participants was 34.5±2.8. About half of them were employed full time. More than half of the women (56.1%) wish to have two children, while 35.8% of women wish to have just one child. Women described their own perceived probability of pregnancy, at an average of 40.5%. The HRQOL score consists of 8 subscales, and each score can be compared with its indicated standard score which is adjusted to 50 points. In this study, the range of participants' subscale scores were from 45.8 to 49.9, slightly lower than the Japanese standard overall. Particularly, the mental health score was 45.8, which was the lowest. The participants were divided into 2 groups based upon the average value of the perceived probability of pregnancy, and then, HRQOL scores in each group were compared. A t-test showed that the low probability group's average score was significantly lower in the subscales, General Health (p&lt;0.01), Vitality (p&lt;0.01), Social Functioning (p&lt;0.05), and Mental Health (p&lt;0.05). The results indicate that a low mental health QOL score is related to a low self-perceived probability of pregnancy rating, for employed married-women aged 30 to 39 wishing to have children. Reproductive life planning support needs careful consideration of mental health status for women.</p>