Curriculum Vitae

Dr. Norifumi KAWABATA

Assistant Technical Staff
Medical IT Center, Nagoya University Hospital

September 21, 2021

1 Affiliation

Medical IT Center, Nagoya University Hospital, 65 Tsurumai-town, Showa-ku, Nagoya-city, Aichi 466–8560
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2 Research Field

- Information Engineering, Information Science
- Multi-view 3D Image and Video, Three-dimensional Image Processing, Three-dimensional Display
- 3DCG, Texture Informatics
- Image Media Quality, Visual Media Processing
- Image and Signal Processing, Digital Watermarking
- Color Information Science and Engineering, Image Analysis, Color Management
- Picture Coding, Image Media Processing, Super-resolution
- Statistical Analysis, Data Mining
- Human Interface and Interaction, Medical Virtual Reality
- Medical System, Medical Imaging, Embedded System

3 Academic & Professional Experience

- October 2021 (Scheduled to arrive at a new academic post)
- August 2021 –
  Center for Healthcare Information Technology, Tokai National Higher Education and Research System
  Assistant Technical Staff,
  Medical IT Center,
  Nagoya University Hospital
- April 2019 – July 2021
  Assistant Professor,
  Department of Information Sciences, Faculty of Science and Technology,
  Tokyo University of Science
- April 2018 – March 2019
  Assistant Technical Staff,
  Research Division of Transportation and Information System, Institutes of Innovation for Future Society,
  Nagoya University
- April 2017 – March 2018
  Research Fellow,
  Center for Frontier Medical Engineering (CFME),
  Chiba University

4 Academic Background

- April 2013 – March 2017
  Miyao Laboratory, Information Platform Group, Department of Information Engineering,
  Graduate School of Information Science,
  Nagoya University
- April 2011 – March 2013
  Horita Laboratory, (Media Information and Communication Technology (MICT)),
  Department of Intellectual Information Engineering,
  Graduate School of Science and Engineering for Education,
  University of Toyama
- April 2007 – March 2011
  Horita Laboratory, (Media Information and Communication Technology (MICT))
  (April 2010 – March 2011), Department of Intellectual Information Engineering,
  Faculty of Engineering,
  University of Toyama
- March 2007
  Seiryo High School, General Course Graduation

5 Academic Degree

- March 2017, Ph.D. of Information Science in Nagoya University
- March 2013, Master of Engineering in University of Toyama
- March 2011, Bachelor of Engineering in University of Toyama

6 Teaching and Research Experience

- August 2021 –
  Assistant Technical Staff,
  Medical IT Center, Nagoya University Hospital
  A Study Support on Medical Information System to Smart Hospital.
- April 2019 – July 2021
  Assistant Professor,
  Department of Information Sciences, Faculty of Science and Technology, Tokyo University of Science
  Education and Research on computer sciences to the bio-medical science and technology field.
  - Introduction to Computer Systems and its Exercises (UNIX, Internet, TeX, C Language Programming)
  - Experiments in Information Sciences I (OCaml)
  - Exercises in Information Sciences I (Java)
  - Experiments in Information Sciences II (PBL)
  - Exercises in Information Sciences II (Application of C Language Programming, Network Programming, SQL, PHP, JavaScript, Multimedia, Embedded System, Image Processing)
  - Experiments in Information Sciences III
  - Exercises in Information Sciences III
  - Advanced Studies and Researches (Group Meeting, Image Processing Seminar, Skill Seminar, Journal Club)

- April 2018 – March 2019
  Assistant Technical Staff,
  Research Division of Transportation and Information Systems, Institutes of Innovation for Future Society, Nagoya University
  - Research Technical Assistance on Transportation and Information Systems in the Next Generation Mobility Society
- April 2017 – March 2018
  Research Fellow, Center for Frontier Medical Engineering, Chiba University
  - Education and Research on developing the Medical Support System using Virtual Reality System and Medical Image Engineering in Nakaguchi Laboratory.
- April 2014 – March 2015
  Teaching Staff, School of Culture-Information Studies, Sugiyama Jogakuen University
  - Video and Animation Production (April 2014 – September 2014)
  - Graphics Design (October 2014 – March 2015)
- October 2013 – March 2014
  Research Assistant, Graduate School of Information Science, Nagoya University
  - Outstanding Graduate COE support subsidy
- April 2013 – September 2013
  Teaching Assistant, Nagoya University
  - Fundamental Seminar A (for Information Platform, Usability)
- October 2011 – March 2012
  Teaching Assistant, University of Toyama
  - Liberal Principles of Exercise (C Language)

7 Qualification

- Mental calculation Grade 1
- Calculation on the Abacus Test Semi-first Step Grade
- Calligraphy First Step Grade
- The EIKEN Test in Practical English Proficiency Grade 2
- Car Driver License for Standard Vehicle
- High School Specialized Teacher's Certificate
- TOEIC 620

8 Technical Skill

8.1 Programming Languages

- C / Visual C++ / C#
- Java
- OCaml / ML

- LISP
- Assembly
- PHP
- Python
- R
- JavaScript
- HTML5 / CSS3

8.2 Tools

- MATLAB
- Scilab
- OpenCV
- Autodesk Maya
- Blender
- Unity
- Adobe Photoshop
- Adobe Premiere
- Adobe After Effect
- JM / High Efficiency Video Coding Software

9 Research Fund, Grant, and Scholarship

- FY2021
  Education and Research Fund for Faculty Member in Tokyo University of Science
- FY2020
  Education and Research Fund for Faculty Member in Tokyo University of Science
- FY2019
  Education and Research Fund for Faculty Member in Tokyo University of Science
- FY2017
  Traveling abroad Travel Expenses Assistance in the Telecommunications Advancement Foundation (IWAIT 2018)
- FY2016
  Support Grant for Student to participate in the International Conference by ITE (ITC-CSCC 2016)
- FY2016
  Scholarship for Ph.D. Student because of having the academic excellent result and submitting the doctor thesis
- FY2015
  Research Grant for Ph.D. Student in Nagoya University
- FY2014
  Research Grant for Ph.D. Student in Nagoya University
- FY2013
  Outstanding Graduate COE Support Subsidy in Nagoya University

10 Affiliated Society, Contribution to Society

10.1 Affiliated Society

- The Institute of Image Information and Television Engineers (ITE)
  (Member, from February 2011)
- The Institute of Electronics, Information and Communication Engineers (IEICE)
  (Member, from August 2013)
- The Institute of Electrical and Electronics Engineers (IEEE)
  (Member, from February 2014)
  - IEEE Signal Processing Society (IEEE SPS)
    (Member, from February 2014)
  - IEEE Engineering in Medicine & Biology Society (IEEE EMBS)
    (Member, from October 2020)
  - IEEE Computer Society (IEEE CS)
    (Member, from October 2020)
- The Institute of Image Electronics Engineers of Japan (IIEEJ)
  (Member, from April 2015)
- The Institute of Information Processing Society of Japan (IPSJ)
  (Member, from January 2017)
- The Japanese Society of Medical Imaging Technology (JAMIT)
  (Member, from April 2018)
- The Japan Society of Computer Aided Surgery (JSCAS)
  (Member, from July 2018)
- The International Society for Optical Engineering (SPIE)
  (Early Career Professional Member, from June 2020)
- Japan Association for Medical Informatics (JAMI)
  (Member, from August 2021)

10.2 Committee Experience

- Proctor, *International Collegiate Programming Contest* (**ICPC 2019**) *Asia Yokohama Regional Online First Round Contest*
  (July 2019)

10.3 Review Experience

- Reviewer, *Multimedia Systems* (**MMSJ**)
  (from September 2021 to now, by once)
- Reviewer, *IEEE Transactions on Neural Networks and Learning Systems* (**TNNLS**)
  (from June 2021 to now, by once)
- Reviewer, *IEEE Signal Processing Letters* (**SPL**)
  (from May 2021 to now, by once)
- Reviewer, *Optical Review*
  (from May 2021 to now, by once)
- Reviewer, *IEEJ Transactions on Electrical and Electronic Engineering*
  (from April 2021 to now, by once)

- Reviewer, *Signal, Image and Video Processing* (**SIVP**)
  (from April 2021 to now, by once)
- Reviewer, *IEICE Transactions on Information and Systems*
  (from April 2021 to now, by once)
- Reviewer, *Journal of the Society for Information Display* (**J. SID**)
  (from June 2020 to now, by once)
- Reviewer, *Sensors* (**SENSC9**)
  (from February 2020 to now, by once)
- Reviewer, *Journal of the Institute of Electrical Engineers of Japan C*
  (from October 2019 to now, by three times)
- Reviewer, *APSIPA Transactions on Signal and Information Processing*
  (from September 2019 to now, by once)
- Reviewer, *IEEE Journal on Emerging and Selected Topics in Circuits and Systems* (**IEEE JETCAS**)
  (from August 2019 to now, by once)
- Reviewer, *Electronics* (**ELECGJ**)
  (from July 2019 to now, by four times)
- Reviewer, *IEEE Journal of Biomedical and Health Informatics* (**JBHI-EMBS**)
  (from July 2019 to now, by seven times)
- Reviewer, *Multimedia Tools and Applications* (**MTAP**)
  (from March 2019 to now, by eleventh times)
- Reviewer, *Neurocomputing* (**NEUCOM**)
  (from February 2019 to now, by six times)
- Reviewer, *Symmetry* (**SYMMAM**)
  (from January 2019 to now, by twice)
- Reviewer, *Applied Sciences* (**Applsci**)
  (from July 2018 to now, by eight times)
- Reviewer, *IEEE Access*
  (from July 2018 to now, by ten times)
- Reviewer, *Journal of Imaging* (**J. Imaging**)
  (from June 2018 to now, by twice)
- Reviewer, *IEEE Transactions on Circuits and Systems II: Express Briefs* (**TCAS-II**)
  (from February 2018 to now, by five times)
- Reviewer, *IEEE Transactions on Circuits and Systems I: Regular Papers* (**TCAS-I**)
  (from February 2018 to now, by three times)
- Reviewer, *Journal of Imaging Science and Technology* (**JIST**)
  (from February 2018 to now, by twelve times)
- Reviewer, *IEEE Transactions on Medical Imaging* (**TMI**)
  (from January 2018 to now, by once)
- Reviewer, *Signal Processing* (**SigPro**)
  (from January 2018 to now, by three times)
- Reviewer, *SPIE Journal of Electronic Imaging* (**JEI**)
  (from December 2017 to now, by once)

- Reviewer, *IEEE Transactions on Image Processing* (**TIP**)
  (from December 2017 to now, by seventeen times)
- Reviewer, *EURASIP Journal on Image and Video Processing* (**JIVP**)
  (from December 2017 to now, by three times)
- Reviewer, *IEEE Transactions on Multimedia* (**TMM**)
  (from September 2017 to now, by twenty nine times)
- Reviewer, *IEEE Transactions on Circuits and Systems for Video Technology* (**TCSVT**)
  (from June 2017 to now, by sixteen times)

11 Awards

[1]. **"Certificate of Appreciation for serving as a reviewer for Journal of Electronic Imaging during the calendar year of 2018,"**
for serving as a reviewer for Journal of Electronic Imaging during the calendar year of 2018,
February 6, 2019.

[2]. **"Elsevier Signal Processing Certificate of Outstanding Contribution in Reviewing,"**
in recognition of the contributions made to the quality of the journal in April 2018,
June 25, 2018.

[3]. **"Certificate of Appreciation for serving as a reviewer for Journal of Electronic Imaging during the calendar year of 2017,"**
February 17, 2018.

[4]. **"Forum on Information Technology (FIT2016) FIT Encouragement Award 2016,"**
Gofuku Campus, Univ. of Toyama (Presentation, Sept. 7, 2016),
September 9, 2016.

[5]. **"IEICE Tokai Section Student Award (Doctor),"**
"A Study of the 3D CG Image Quality Metrics with 8 Viewpoints Parallax Barrier Method,"
Castle Plaza Nagoya,
June 3, 2015.

12 Achievement

12.1 Peer-reviewed Journal Papers

[1]. **Norifumi Kawabata**, (Submitted)

[2]. **Norifumi Kawabata**, (Submitted, in Japanese)

[3]. **Norifumi Kawabata** and Toshiya Nakaguchi, (Submitted)

[4]. **Norifumi Kawabata** and Toshiya Nakaguchi, (Submitted, in Japanese)

[5]. **Norifumi Kawabata**, **"Statistical Analysis of Questionnaire Survey on the Assessment of 3D Video Clips,"** 13 pages (on final revision, Conditional Acceptance), 2021.

[6]. **Norifumi Kawabata**, **"Multi-view 3D CG Image Quality Evaluation Including Visible Digital Watermarking Based on RGB Color Information,"** 9 pages (on final revision, Conditional Acceptance), 2021.

[7]. **Norifumi Kawabata** and Masaru Miyao, **"Multi-view 3D CG Image Quality Assessment for Contrast Enhancement Based on S-CIELAB Color Space,"** *IEICE Transactions on Information and Systems*, Vol. E100-D, No. 07, pp. 1448–1462, July 2017.

[8]. Norifumi Kawabata and Yuukou Horita, **"Statistical Analysis of Subjective Assessment for 3D CG Images with 8 Viewpoints Lenticular Lens Method,"** *IIEEJ Transactions on Image Electronics and Visual Computing*, Vol. 4, No. 2, pp. 101–113, December 2016.

[9]. Norifumi Kawabata and Masaru Miyao, **"3D CG Image Quality Metrics by Regions with 8 Viewpoints Parallax Barrier Method,"** *IEICE Transactions on Fundamentals of Electronics, Communications and Computer Sciences*, Vol. E98-A, No. 08, pp. 1696–1708, August 2015.

12.2 Peer-reviewed International Conference Papers or Proceedings

[10]. Norifumi Kawabata and Toshiya Nakaguchi, **"(Submitted),"**

[11]. Norifumi Kawabata, **"(Submitted),"**

[12]. Norifumi Kawabata, **"3D CG Image Noise Removal and Quality Assessment Based on Sparse Dictionary Learning,"** *Proc. of The 2021 IEEE 3rd Global Conference on Life Sciences and Technologies* (**LifeTech 2021**), OS-AIT1-3 (Advanced Image Technology in Applied Life Science: IoT & Deep Learning Perspectives), pp.225–226, Nara Royal Hotel, Nara, Japan (Hybrid), March 9-11, 2021.

[13]. Norifumi Kawabata and Toshiya Nakaguchi, **"Color Laparoscopic Image Region Segmentation after Contrast Enhancement Including SRCNN by Image Regions,"** *Proc. of SPIE (The International Forum on Medical Imaging in Asia* (**IFMIA2021**)), no.85, 6 pages, National Taiwan University of Science and Technology, Taiwan (Online), January 24-26, 2021.

[14]. Norifumi Kawabata and Toshiya Nakaguchi, **"Laparoscopic Image Region Segmentation Based on Texture Analysis by Regions,"** *Proc. of The Tenth International Workshop on Image Media Quality and its Applications* (**IMQA2020**), PS2-4, 6 pages, National Taiwan University of Science and Technology, March 12-13, 2020.

[15]. Norifumi Kawabata and Toshiya Nakaguchi, **"Color Laparoscopic Image Diagnosis for Automatic Detection of Coded Defect Region,"** *Proc. of The 5th Asia Color Association Conference* (**ACA2019 Nagoya**), Vol. 5, P1-25, pp. 487–492, Meijo Univ., Nagoya, Japan, November 29–December 2, 2019.

[16]. Norifumi Kawabata, **"Computational Classification of Texture Contents in the Shitsukan Research Database,"** *Proc. of The 26th International Display Workshops* (**IDW'19**), *Workshop on Applied Vision and Human Factors*, Vol. 26, VHF7-3, pp. 1185–1188, Sapporo Convention Center, Sapporo, Japan, November 27-29, 2019.

[17]. Norifumi Kawabata, **"HEVC Image Quality Assessment of the Multi-view and Super-resolution Images Based on CNN,"** *Proc. of 2018 IEEE 7th Global Conference on Consumer Electronics* **(GCCE 2018)**, POS1A-3, pp. 38–39, Nara Royal Hotel, Nara, Japan, October 9-12, 2018.

[18]. Norifumi Kawabata, **"Image Diagnosis for Coded Defect Detection on Multi-view 3D Images,"** *Proc. of The Ninth International Workshop on Image Media Quality and its Applications* **(IMQA2018)**, PS-10, pp. 110–119, Kobe Univ., Kobe, Japan, September 27-28, 2018.

[19]. Norifumi Kawabata, **"Multi-view 3D CG Image Quality Evaluation and Analysis for Application Procedure between H.265/HEVC and Watermarking,"** *Proc. of The 21st International Workshop on Advanced Image Technology* **(IWAIT2018)**, D3-3, 4 pages, The Imperial Mae Ping Hotel, Chiang Mai, Thailand, January 7-9, 2018 **(Traveling Abroad Travel Expenses Assistance in the Telecommunications Advancement Foundation)**.

[20]. Norifumi Kawabata, **"Image Quality Assessment for Multi-view 3D CG Images and 5K High Definition Images Based on S-CIELAB Color Space,"** *Proc. of The 24th International Display Workshops* **(IDW'17)**, *Workshop on 3D/Hyper-Realistic Displays and Systems*, Vol. 24, 3D5-1, pp. 849–852, Sendai International Center, Sendai, Japan, December 6-8, 2017.

[21]. Norifumi Kawabata and Masaru Miyao, **"Multi-view 3D CG Image Quality Assessment for Contrast Enhancement Including S-CIELAB Color Space in case the Background Region is Gray Scale,"** *Proc. of The 31st International Technical Conference on Circuits/Systems, Computers and Communications* **(ITC-CSCC2016)**, T2-6-3, pp. 579–582, Municipal Center (Jichikaikan), Okinawa, Japan, July 10-13, 2016 **(ITE (The Institute of Image Information and Television Engineers) International Conference Support Grant)**.

[22]. Norifumi Kawabata and Masaru Miyao, **"Multi-view 3D CG Image Quality Evaluation Including Visible Digital Watermarking Based on Color Information,"** *Proc. of The Eighth International Workshop on Image Media Quality and its Applications* **(IMQA2016)**, OS1-3, pp. 18–26, Noyori Conference Hall, Higashiyama Campus, Nagoya Univ., Nagoya, Japan, March 10-11, 2016.

[23]. Norifumi Kawabata and Masaru Miyao, **"3D CG Image Quality Assessment for the Luminance Change by Contrast Enhancement Including S-CIELAB Color Space with 8 Viewpoints Parallax Barrier Method,"** *Proc. of The 1st International Conference on Advanced Imaging* **(1st ICAI2015)**, T107-01, pp. 632–635, National Center of Science (Hitotsubashi Memorial Hall), Tokyo, Japan, June 17-19, 2015.

[24]. Norifumi Kawabata, Masaru Miyao, and Yuukou Horita, **"3D CG Image Quality Metrics Including the Coded Degradation by Regions with 8 Viewpoints Parallax Barrier Method,"** *Proc. of The Seventh International Workshop on Image Media Quality and its Applications* **(IMQA2014)**, PS-9, pp. 102–105, Keyaki Hall, Nishi Chiba Campus, Chiba Univ., Chiba, Japan, September 2-3, 2014.

[25]. Norifumi Kawabata and Yuukou Horita, **"Statistical Analysis and Consideration of Subjective Evaluation of 3D CG Images with 8 Viewpoints Lenticular Lens Method,"** *Proc. of The Sixth International Workshop on Image Media Quality and its Applications* **(IMQA2013)**, T1-2, pp. 23–32, Takanawa Campus, Tokai Univ., Tokyo, Japan, September 12-13, 2013.

[26]. Norifumi Kawabata, Keiji Shibata, Yasuhiro Inazumi, and Yuukou Horita, **"Image Quality Evaluation of 3D CG Images with 8 Viewpoints Lenticular Lens Method,"** *Proc. of The Fifth International Workshop on Image Media Quality and its Applications* **(IMQA2011)**, D-10, pp. 88–90, Campus Plaza Kyoto, Kyoto, Japan, October 4-5, 2011.

12.3 Technical Reports

[27]. Norifumi Kawabata and Masaru Miyao, **"Multi-view 3D CG Image Quality Assessment by Using S-CIELAB Color Space Including Visible Digital Watermarking by Regions in case the Background Region is Gray Scale,"** *IEICE Tech. Rep., Image Media Quality*, vol.116, no.68, IMQ2016-1, pp.1–6, Nishi-Chiba Campus, Chiba Univ., May 2016.

[28]. Norifumi Kawabata and Masaru Miyao, **"3D CG Image Quality Metrics for the Contrast Enhancement of the Object Region Including S-CIELAB Color Space with 8 Viewpoints Parallax Barrier Method,"** *IEICE Tech. Rep., Image Media Quality*, vol.115, no.48, IMQ2015-4, pp.17–22, Gofuku Campus, Univ. of Toyama, May 2015.

12.4 Dissertation

[29]. Norifumi Kawabata,
"A Study of the Multi-view 3D CG Image Quality Assessment Including the Image Characteristics,"
Doctor Dissertation, Department of Information Engineering, Graduate School of Information Science, Nagoya University, January 2017.