

Curriculum Vitae January 2019

Jean-Baptiste Thomas, Dr, HDR

Maître de Conférences / Associate Professor at Université de Bourgogne, Franche-Comté

Faculty of sciences and technologies, Dpt IEM, Lab ImViA

Research fellow at NTNU, Dpt IDI, The colorlab

Sex : Male

Birthdate: 26/10/1981

Phone: +47 47 74 74 17 or +33 (0)7 87 88 21 94

email: jean.b.thomas@ntnu.no

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1 General information

1.1 Synopsis

- I am **Maître de conférence**, permanent Associate Professor in the French system, at [Université de Bourgogne, Franche-Comté](#) (UBFC, Dijon, Bourgogne, France). Within this context, I am teaching at the department **IEM** (Computer science, electronics and mechanics). My research is associated to the Laboratory ImViA (former [Le2i - UMR CNRS 6306](#)).
- I am in a **sabbatical** from my academic position since 2016 and until 2019. Time that I dedicate as a **research fellow** at [NTNU](#), campus Gjøvik, where I work on the [MUVApp](#) project. This project focuses on the measure and the understanding of the appearance of materials and objects.
- I was 50% **guest researcher** at [IVRL](#), EPFL (Lausanne, Suisse) during the year 2015-16. This sabbatical was within the context of a *délégation CNRS*. We developed a method to split visible and near infrared components from an image acquired by our sensor prototype⁴⁰. I also used this temporary assignment to visit and initiate research with several labs, in particular the [LISTIC^{25,30}](#) in Annecy, France and the [LNPC⁷](#) in Grenoble, France.
- My scientific expertise concerns **color and multispectral imaging, from acquisition to visualization** through the following aspects: imaging and optical models, imaging technologies, physical measure, human visual system, material appearance and communication of appearance.
- My teachings include signal and image acquisition and processing, sensor technologies, color science and color appearance, color and spectral imaging.
- I contributed to the internationalization of education through the development of a Master degree in English at UBFC, Master on [Advanced Electronic Systems Engineering¹](#) in 2015 and 2016. I am in charge of the submission of the Erasmus Mundus [COSI](#) Master program in 2019 for NTNU.
- I reviewed for several scientific journals (Pattern Recognition, Applied Optics, Journal of Imaging Science and Technology, Journal of the Society for Information Display, Chinese Optical Letters, Scientific Research and Essays, IEEE Transactions on Image processing, IEEE Transactions on Circuits Systems and Video Technology, IEEE Transactions on Industrial Electronics, Journal of Modern Optics, Sensors, Optical engineering, Applied soft computing, ISPRS International Journal of Geo-Information, Image communication, Multimedia Tools and Applications, Optics Express, Remote sensing).
- I participated to conference organisation, i.e. CIC (Colour and Imaging Conference), CoMI (COlor and Multispectral Imaging workshop), CVCS (Colour and Visual Computing Symposium) and MCS (Multispectral Colour Science). I also reviewed for those conferences, but also for EUVIP, ICIP, ICISP, CCIW.
- I am Associate Editor for the journal Sensors, [Snapshot Multi-Band Spectral and Polarization Imaging Systems²](#). I am also Associate Editor for the upcoming issue of Journal of Imaging Science and Technology, JIST-FIRST, related to CIC in 2019.
- I was **principal researcher and coordinator** of the [Open Food System³](#) project for my lab until the end of this project.
- I was **technical coordinator** for the EU projects [H2020-EXIST⁴](#) and [CATRENE-CISTERN⁵](#) until my sabbatic in 2016.
- I was appointed adjunct head of the MOTI research team (Methods and tools for image processing) at the Le2i in 2015 to write the activity report for the national evaluation. I was elected to represent the Vision dpt at the laboratory council between 2012 and 2016.
- I supervised and co-supervised several PhD and Master thesis.

¹http://www-iem.u-bourgogne.fr/MASTER/MSCAESE/homepage_128.htm

²http://www.mdpi.com/journal/sensors/special_issues/SMSPIIS

³<http://www.openfoodsystem.fr>

⁴http://cordis.europa.eu/project/rcn/198017_en.html

⁵<http://www.cistern.nl/index.php/consortium>

1.2 Education

- **Habilitation à diriger des recherches**, in Instrumentation and computer image (2018), from Université de Bourgogne, Franche-Comté, France.
- **PhD**, in Color imaging science (2009), from Université de Bourgogne, France, in collaboration with Gjøvik University College, Norway.
- **Master**, in Optics, Image and Vision, majors in Image, Vision and Signal (2006), from Université Jean Monnet, Saint-Etienne, France.
- **Bachelor**, in Applied physics (2004), from Université Jean Monnet.

1.3 Scientific history

- Post doctoral research fellow, since September 2016 at NTNU-Gjøvik.
 - Thema: Measuring and understanding the appearance of 3D complex transparent or translucent objects.
 - Project: MUVApp.
- Maître de conférences, since September 2010 at Université de Bourgogne, Franche-Comté.
 - Thema: Acquisition and modelling of multispectral images (technology design, optimization, demosaicing, illumination, etc.). We developed technologies to take multispectral imaging outside of the labs.
 - Main projects: Open Food System (PSPC), EXIST (H2020), CISTERN (CATRENE).
 - Habilitation thesis: Multispectral imaging for computer vision.
 - * Reviewers: Prs Edoardo Provenzi (CNU 26), Patrick Lambert (CNU 61) and Kacem Chehdi (CNU 61).
 - * Jury president: Pr Ludovic Macaire (CNU 61).
 - * Examiners: Prs Jon Hardeberg, Albert Dipanda (CNU 27) and Pierre Gouton (CNU 61).
- Post doctoral research fellow, February 2010 to July 2010.
 - At Centre de recherche et de restauration des Musées de France (C2RMF), Paris, France.
 - Thema: Obsolescence and contemporary art; Digitization of artist films.
- Post doctoral research fellow, October 2009 to December 2009.
 - At Gjøvik University College, Gjøvik, Norway, The Norwegian Color Research Laboratory (Colorlab).
 - Thema: Spatial characterization of video-projection systems and colorimetric optimization of 3D video-projection systems.
- Research fellow, PhD candidate, October 2006 to September 2009.
 - At Université de Bourgogne, Dijon, France, and at Gjøvik University College, Gjøvik, Norway.
 - Laboratories: Le2i and Colorlab.
 - Thesis: Colorimetric characterization of displays and multi-display systems.
 - * Supervisors: Prs Pierre Gouton and Jon Y. Hardeberg, and Dr. Irène Foucherot.
 - * Reviewers: Prs Sabine Süsstrunk and Lindsay MacDonald.
 - * Jury president: Pr Françoise Viénot.
- Master thesis, Mars 2006 to September 2006.
 - At Université Jean Monnet, Saint-Etienne, France.
 - Laboratory: Laboratory of computer graphics and vision engineering (LIGIV).
 - Supervisor: Pr Alain Trémeau.
 - Thesis: Color image watermarking for the insertion of a representative color chart into the image.
- Internship April to July 2005.
 - At Université Jean Monnet, Saint-Etienne, France.
 - Laboratory: LIGIV.
 - Supervisor: Dr. Philippe Colantoni.
 - Technical report: Colorimetric characterization of displays, estimation of a model quality.

1.4 References

- Selected academic references.
 - Pierre Gouton (Pr. Université de Bourgogne, Franche-Comté, France)
 - Alamin Mansouri (Pr. Université de Bourgogne, Franche-Comté, France)
 - Olivier Laligant (Pr. Université de Bourgogne, Franche-Comté, France)
 - Jon Y. Hardeberg (Pr. NTNU-Gjøvik, Norway)
 - Ivar Farup (Pr. NTNU-Gjøvik, Norway)
 - Marius Pedersen (Pr. NTNU-Gjøvik, Norway)
 - Sabine Süsstrunk (Pr. EPFL, Switzerland)
 - Alain Trémeau (Pr. Université Jean Monnet, France)
 - Philippe Colantoni (Ass. Pr. Université Jean Monnet, France)
 - Edoardo Provenzi (Pr. Université de Bordeaux, France)
 - Ludovic Macaire (Pr. Université de Lille, France)
- Industrial references may be available under conditions.

2 Pedagogical experience

I want my students to be capable of original and critical thinking based on causal reasoning. That will make them able to learn by themselves whatever they will need or want to learn in their lives. In order to ensure that, I believe there are important ingredients: Technical tools to understand and model observations and self-confidence are amongst the most important items to be transferred to them. Communication skills and other humanistic values are also at the top of the list to me. The nature of the specific technical tools are actually not very important as long as the students understand the reasoning behind them, because an example is always useful to start from. However, teacher expertise is important, for the student must acknowledge the teacher competences, and vocations might be generated by the course, this is especially important for undergraduate students. The statement above implies that I need to adapt to the different student profiles and characters, which is not very much compatible with the typical academic course style based on hours of monologue in front of 200 students in an amphitheatre.

2.1 Teaching

Between 2010 and 2016 I was teaching at the Dpt of computer science, electronics and mechanics at the Faculty of sciences and technologies at UBFC, Dijon. Most teachings are related to the bachelor programs in *Computer science* or *Engineering science*; And to the Master program *Information and communication science and technologies*, with majors in *Computer Science* or in *Electronics, Signal, Image*. The names of those programs may have slightly changed for the 2017-21 education programs.

- I was responsible for the course **color science** within the first year of Master *Electronics, Signal, Image*, within which I gave the course and the practice. I initiated a new course format based on an individual project for which every student was responsible for, with my help, the choice and limit of the topic and the way to convey it and to present it to the classroom. This was defined after the observation that very few students had a clear educational project or professional project when they arrived in the first year of Master. This project permitted to generate discussions about that. This course was also a great support to invite several colleagues⁶, in particular from Norway within our ERASMUS agreements or within research projects. Students could benefit from diverse visions on the topic and recommendations on their projects in French or in English. I also invited several French colleagues. The goal of this format was to make the students more responsible and standalone, which is usually not the best quality of the French standard education strategy. According to the evaluations I got from the students (through the University yearly survey on quality) and direct feedbacks, this format helped them very much, beyond the content of the course. The evaluation was a written exam in addition to the project achievement, report and presentation.
- The rest of my teaching was mostly within courses managed by my colleagues where my implication varied. In the Bachelor programs, I did a lot of **Electronics** practice where the exam was based on the practice. I reformatted the practice for the courses **Introduction to vision** and **Signal processing**, which exam was based on the practice. I helped with the course **Professional project**. In the Master programs, I contributed to the course **Image processing** in the *Computer science* Master and in the course of **Spectral imaging** in the *Electronics, Signal, Image* Master. Those exams were classical written examinations.
- I was also giving a course on **image processing** in English with the Master MaTEA at AgroSup Dijon between 2011 and 2015. Those students were mostly coming from mechanics in farming, so I had to adapt the content and examinations. Depending on the year, I used different strategies for the teaching and exam. The most successful course was to do a lot of improvisation based on discussions and interest of the students for a specific topic.

2.2 Teaching hours

In the French system, the teaching hours spent in front of the student should be 192 hours a year by regulation, it is a common practice to do a little extra hours to round up and finish the courses. I did my full service every year since 2010, except when I was temporary assigned to 100% research at the CNRS in 2015-16, and since I am in a research sabbatical since 2016. This is summarized in the Table below.

Year	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Hours of teaching	226	231	210	231	243	Temporary assignment to CNRS	Research sabbatical

Table 1. Summary of teaching hours, by year, since 2010. Hours as counted as in the French system as *Heures equivalent TD*.

I also taught about 70 hours of diverse topics during my PhD between 2006 and 2009, in particular within the Masters Media Technology and CIMET at HIG in Norway.

⁶Pr. Ivar Farup, Ass. Pr. Marius Pedersen, Pr. Edoardo Provenzi, Ass. Pr. Philippe Colantoni, Ass. Pr. Marco Anisetti, etc.

2.3 Responsibilities

- I was responsible of the Master [Advanced Electronic Systems Engineering⁷](#) in 2015 and 2016, program in english towards internationalization. My action was to start this program and in Fall 2016 it opened with 14 students. Within this program, we signed a MoU with HAINAN University in China, that planned student exchange. I also collaborated with the French embassy in Nigeria and obtained 3 student grants from the Nigerian oil industry for Nigerian students in our program. When I took my sabbatical, Pr Jean-Marie Bilbault took over the coordination in fall 2016. There are 23 students registered in this program this year 2018-19.
- I participated to the Master ERASMUS MUNDUS COSI as *faculty advisor* and in the *quality board*. I was specially appointed by NTNU, who is taking over the coordination, to resubmit this program to the EU in 2019.

My expertise in education management is clearly oriented to internationalization and towards joint programs. I am experienced in foreign students management, and in the interaction with international offices of diverse Universities.

⁷http://www-iem.u-bourgogne.fr/MASTER/MSCAESE/homepage_128.htm

3 Education through research

3.1 Post Doctoral fellows

I worked with 2 post doctoral fellows that we hired on the projects OFS and EXIST. They are summarized in Table 2.

- Dr Pierre-Jean Lapray is now *Maître de Conférences* at Université de Haute-Alsace.
- Dr Keivan Ansari is back to Iran where he is Assistant Professor at Institute for Colour Science and Technology in Tehran.

Table 2. Post doctoral research fellow management.

Name	Time	Thema	Funding	Management
Pierre-Jean LAPRAY	01/12/2013 - 31/07/2014	Spectral Filter Array: Prototyping of a camera	OFS	J.B. Thomas Pr. P. Gouton
Keivan ANSARI	01/12/2015 - 30/09/2016	Multispectral face recognition: Design and demonstrator	EXIST	J.B. Thomas Pr. P. Gouton

3.2 PhD candidates

I co-supervised 4 PhD thesis. They are summarized in Table 3.

- Dr Xingbo Wang works now for AAC Technologies, a compagny in China that develops smartphone components. He is in charge of the chinese branch of the departement that handle imaging solutions, with major interest in image quality - IQ (IQ lab, IQ assessment, IQ tuning, and algorithms, and lab management, including hiring process).
- Dr Ping Zhao is software developer for Idletechs AS, he develops real time analysis of multivariate data. Before that, he was system developer for Epson Norway R&D AS, where he worked on interactive computer vision based on projection systems.
- Dr Jessica El Khoury is teaching assistant at Université de Bourgogne in Auxerre. She opened her expertise towards RTI (reflectance transformation imaging) and surface inspection.
- Dr Haris Ahmad Khan is now post doctoral fellow in the Farm Technology Group, Wageningen University Development & Research, Wageningen, in the Netherlands.

Table 3. Co-supervision of PhD.

Name	Time	Title	Funding	Context	Supervision (%)
Xingbo WANG	01/10/2011 - 10/10/2016	Filter array based spectral imaging: demosaicking and design considerations	50% Burgungy regional council 50% NTNU-Gjøvik	co-tutelle UB + NTNU-Gjøvik	Pr. J.Y. Hardeberg (25%) Pr. P. Gouton (25%) J.B. Thomas (50%)
Ping ZHAO	01/10/2012 - 23/11/2015	Camera Based Display Image Quality Assessment	100% HIG	hypercept project	Pr. J.Y. Hardeberg (50%) M. Pedersen (30%) J.B. Thomas (20%)
Jessica EL KHOURY	01/10/2013 - 05/12/2016	Model and quality assessment of single image dehazing	100% UB	OFS project	Pr. A. Mansouri (50%) J.B. Thomas (50%)
Haris AHMAD	01/10/2015 - 09/10/2018	Illuminant estimation from uncalibrated multispectral images	50% Burgungy regional council 50% NTNU-Gjøvik	co-tutelle UB + NTNU-Gjøvik	Pr. J.Y. Hardeberg (30%) Pr. O. Laligant (10%) J.B. Thomas (60%)

3.3 Master thesis

I supervised or co-supervised 9 Master thesis. They are summarized in Table 4.

3.4 Other supervisions

- I am occasionally Master thesis external examiner for HIG/NTNU, Norway and for EPFL, Switzerland.
- I supervise each year several student projects in Master and Bachelor programs of different Universities.
- I was member of the Jury for the PhD defense of Hasan SHEIKH FARIDUL (Université Jean Monnet, the 06/01/2014).
- I was member of the Jury for the PhD defense of Sofiane MIHOUBI (Université de Lille, the 22/11/2018).

Table 4. Encadrement de thèses de Master.

Name	Time	Title	Context	Supervision
Espen MIKALSEN	01/01/2007 - 01/07/2007	Verification and extension of a camera based calibration method for projection displays	HIG	J.B. Thomas Pr. J.Y. Hardeberg
Julie-Gaëlle ALBRECHT	15/03/2013 - 15/07/2013	Colorimetric characterization and classification for generating a color palette of Burgundy wines	collaboration BIVB	J.B. Thomas
Jessica EL KHOURY	15/03/2013 - 15/07/2013	Spectral measurement in cooking environment	OFS project	J.B. Thomas
Daniel SUAZO	01/01/2013 - 01/07/2013	Edge blending in multiprojection systems	collaboration HIG	M. Pedersen J.B. Thomas
Hassan A. MAHAMAT	15/05/2014 - 14/07/2014	Automatic photometric compensation of projection surfaces		J.B. Thomas
Antoine GHORRA	30/03/2015 - 30/07/2015	Illuminant estimation from uncalibrated multispectral images		J.B. Thomas
Samir RAOUI	30/03/2015 - 30/07/2015	Integration of a colorimeter into a prototype of commercial oven for real-time analysis	OFS Project	J.B. Thomas S. Jacquir
Najwa ALKAOUI	01/04/2017 - 31/08/2017	Translucent material Analysis and modelling	MUVApp Project	J.B. Thomas I. Farup
Nathan MIOT-BATTU	16/03/2017 - 15/09/2017	Spectral filter array image quality	OFS Project	J.B. Thomas P.-J. Lapray

4 Projects and funding

4.1 MUVApp

I joined the [MUVApp](#) project (Measuring and Understanding Visual Appearance) as post doctoral fellow in 2016. I did not contribute to the writing of the project and I do not contribute to its management. I interact with the Colorlab members, in particular Prs Ivar Farup et Jon Hardeberg. I interact also with the other members, e.g. Prs Karl Gegenfurtner, Patrick Callet or Shoji Tominaga.

4.2 EXIST and CISTERN

I worked on two EU projects for which I was technical coordinator for my Lab in France until my sabbatical: [EXIST](#)(H2020) and [CISTERN](#) (CATRENE). Those projects target the definition of new generation image sensors [CMOS](#). Those projects were launched in 2015.

EXIST 36 months; Kick off the 01/05/2015.

CISTERN 36 months; Kick off the 01/04/2015.

I wrote the project proposal about multispectral imaging for the Le2i-UB. Pr Pierre Gouton took over the coordination after I left for my sabbatical.

4.3 OFS

[Open Food System](#) developed the future kitchen based on connected objects and automated cooking. This project was funded by the ministry of industry of France as *Projets de recherche et développement Structurants pour la Compétitivité (PSPC)*. 42 months; Kick off, 12/01/2013; Closing, 12/07/2016.

I wrote the project proposal for the Le2i-UB and managed it until the end.

4.4 CNRS-INS2I-JCJC-2017 MOSAIC

We developed this project with Pr. Ludovic Macaire and Ass. Pr. Benjamin Mathon at the laboratory CRISAL, around the PhD of Sofiane Mihoubi. This project answered the need of hyperspectral image database acknowledged by the French institutions.

We wrote the proposal together with benjamin, he managed the project.

4.5 AURORA 2015

With Pr. Marius Pedersen (NTNU-Gjøvik), we obtained a grant for research mobility in the call AURORA of the program Hubert Curien, funded by the embassy. We worked on the influence of orientation on the chromatic contrast sensitivity functions of the human visual system and its consequences on image quality.

We wrote the project together and managed this project for our respective Universities.

4.6 PARI

The Regional Council of Bourgogne permitted to co-finance 2 PhD thesis. The thesis of Xingbo Wang and Haris Ahmad were co-financed by NTNU-Gjøvik, Norway. The projects were co-written with the co-supervisors.

4.7 BQR PRES 2014

We obtained a local funding to develop the use of our prototype spectral cameras in automotive applications. This funding permitted to duplicate our SFA prototypes.

We co-wrote this project with Pierre Gouton, he managed this project.

4.8 BQR 2012

I obtained a local funding to continue my work on obsolescence and contemporary art, on FLICKER movies, initiated during my post doc at the C2RMF. A software for scanner colorimetric calibration was developed.

I wrote and managed this project.

4.9 Hypercept

I was invited to participate to the project [hypercept](#)⁸ funded by the Norwegian Research Council. This project permitted to continue my historical collaboration with HIG/NTNU-Gjøvik. In particular I could interact with Pr. Marius Pedersen around the PhD of Ping Zhao.

I was only external member to this project.

4.10 COSCH

I was member of the network action COST [COSCH](#)⁹ dedicated to imaging technologies on cultural heritage.

I was only a distance member of this project. Pr Alamin Mansouri was the principal contact for the Le2i-UB.

⁸http://colourlab.no/research_and_development/research_projects/hypercept

⁹http://www.cost.eu/domains_actions/mpns/Actions/TD1201

5 Research expertise

My research^{75,86} focuses on color and multispectral imaging. I developed technologies and solutions in this context and started to use them toward the measurement or estimation of object appearance in uncontrolled conditions. Indeed, behind the capability of capturing pictures, a camera is also a relative measurement device.

5.1 Material appearance

The appearance of material or objects is an open research field. Although most of us are able to perceive and describe more or less the appearance of an object, we still do not understand the underlying mechanisms, neither the measure we could use to quantify those perceptions and descriptions. This is a transdisciplinary research in which I input my expertise in imaging, optics and signal processing.

- We analyse the correlation between contrast and gloss perception³⁸.
- We initiated qualitative research through the creation of a collection of art objects that permits to study, in practice, the different concepts related to material appearance^{27,85}. This year, we are presenting preliminary results at Colour and Imaging Conference²³ and at Electronic Imaging²². We are investigating how caustics impact transparency and gloss perception. We are also conducting measurement and acquisition campaigns on those objects.

5.2 Color image reproduction, modelling and visualization

- Up to 2010, I focused on the colorimetric characterization of display devices. I worked on the physical modelling of the technologies around color, spatial uniformity image fusion and seamlessness. We did communicate heavily on this topic^{14,18–21,58,60,62–67,69,73,78}.
- I considered the image gamut and the sampling of color spaces^{13,52,68,70}. By using graphs formalism, we investigated the image structure and developed new visualization processes⁶¹.
- We contributed to the evaluation of displayed image quality through Ping Zhao PhD thesis^{15,42,47,51,57}, where we used a camera to replace the observer for quality evaluation.

5.3 Image acquisition and modelling

- Since 2010, I focused on color and spectral image acquisition and related processing. On color image capture, I transferred my expertise from displays to scanners⁵⁹ then to cameras^{71,72}.
- I contributed strongly to the development of the SFA technology (Spectral Filter Arrays) for multispectral image acquisition^{79–82}. This research was visible so we gave a *short course* on this technology at Colour and Imaging Conference⁸³ and I was invited to a *Dargstuhl Seminar*⁸⁴ to provide expertise. This is also the keystone of my French Habilitation thesis⁷⁵.
- We realized a prototype camera that captures visible and near infrared information in a single shot^{12,16,36,50} and redefine the imaging pipeline for this camera^{10,34}. This was made possible thanks to the funding of the OFS project, augmented by a BQR project and by the collaboration with pierre-Jean Lapray, hired as post doctoral fellow. We generated multi and hyperspectral image data sets for algorithm benchmark or simulation^{3,10,36}. The new generation prototypes and commercial products based on this technologies are the output of the projects CISTERN and EXIST.
- We discussed what should be the spectral sensitivities of such sensors^{11,17,39,53,56}. We developed and compared demosaicing algorithms, in particular through the PhD thesis of Xingbo Wang^{2,7,26,31,33,44,48,54,55} and through a collaboration with the EPFL, we combined demosaicing and unmixing of spectral components⁴⁰.
- We considered the dehazing of color and spectral images through the PhD of Jessica El Khoury^{4,6,8,25,28,30,32,41,45,49}.
- We developed the concept of *multispectral constancy* and of *spectral adaptation* within the PhD thesis of Haris Ahmad Khan^{5,9,29,35,37,43}. This permits a stable representation of spectral information in case of illumination change or for uncalibrated images¹.
- An application of multispectral video applied to background subtraction was also presented⁴⁶.

The robustness and simplicity of the SFA technology coupled with the understanding of the illumination permit to take multispectral cameras outside of laboratories. That enables innovation on many fields, and application examples are demonstrated in medical, agriculture and automotive fields.

5.4 Publications

The list of scientific communications appears in the next pages. I refer to my [Google Scholar](#) for citation counts and popular indices¹⁰.

In the following list, references 1 to 21 are articles published in journals with peer-review. I added a note for the *impact factor* JCR 2017; References 22 to 70 are published in conference proceedings with peer-review¹¹; References 71 to 73 are book chapters; Reference 74 is my PhD thesis, reference 75 is my French Habilitation thesis; The last references are noticeable invited talks given to seminars, and technical reports. I contributed also to minor events not listed here. References 87 to 90 are the PhD thesis completed under my co-supervision.

You will access my publications at my personal [webpage](#)¹², which I try to keep up to date.

¹⁰<https://scholar.google.fr/citations?user=MkzII3cAAAJ&hl=fr>

¹¹I let in the list a Norwegian conference without proceedings because I thought it was relevant for this application³⁰.

¹²<http://jbthomas.org/publications-2.html>

Scientific communications

Journals with peer-review

1. H. Ahmad Khan, J.-B. Thomas, J. Hardeberg, and O. Laligant. Multispectral camera as spatio-spectrophotometer under uncontrolled illumination. *Optics Express*, to appear. [JCR-IF=3.356]
2. J.-B. Thomas, I. Farup. Demosaicing of Periodic and Random Color Filter Arrays by Linear Anisotropic Diffusion. *Journal of Imaging Science and Technology*, 62(5):50401-1-50401-8, 2018. [JCR-IF=0.535]
3. H. A. Khan, S. Mihoubi, B. Mathon, J.-B. Thomas, and J. Y. Hardeberg. HyTexiLa: High Resolution Visible and Near Infrared Hyperspectral Texture Images. *Sensors*, 18(7), 2018. [JCR-IF=2.475]
4. J. El Khoury, S. Le Moan, J.-B. Thomas, and A. Mansouri. Color and sharpness assessment of single image dehazing. *Multimedia Tools and Applications*, 77:15409–15430, June 2018. [JCR-IF=1.541]
5. H. A. Khan, J.-B. Thomas, J. Y. Hardeberg, and O. Laligant. Spectral Adaptation Transform for Multispectral Constancy. *Journal of Imaging Science and Technology*, 62(2):20504–1–20504–12, 2018. [JCR-IF=0.535]
6. J. El Khoury, J.-B. Thomas, and A. Mansouri. A Database with Reference for Image Dehazing Evaluation. *Journal of Imaging Science and Technology*, 62(1):10503–1–10503–13, 2018. [JCR-IF=0.535]
7. P. Amba, J. B. Thomas, and D. Alleysson. N-LMMSE Demosaicing for Spectral Filter Arrays. *Journal of Imaging Science and Technology*, 61(4):40407–1–40407–11, 2017. [JCR-IF=0.535]
8. V. W. de Dravo, J. E. Khoury, J. B. Thomas, A. Mansouri, and J. Y. Hardeberg. An Adaptive Combination of Dark and Bright Channel Priors for Single Image Dehazing. *Journal of Imaging Science and Technology*, 2017(25):226–234, 2017. [JCR-IF=0.535]
9. H. A. Khan, J.-B. Thomas, J. Y. Hardeberg, and O. Laligant. Illuminant estimation in multispectral imaging. *J. Opt. Soc. Am. A*, 34(7):1085–1098, Jul 2017. [JCR-IF=1.566]
10. P.-J. Lapray, J.-B. Thomas, and P. Gouton. High Dynamic Range Spectral Imaging Pipeline For Multispectral Filter Array Cameras. *Sensors*, 17(6):1281, 2017. [JCR-IF=2.475]
11. P.-J. Lapray, J.-B. Thomas, P. Gouton, and Y. Ruïchek. Energy balance in Spectral Filter Array camera design. *Journal of the European Optical Society-Rapid Publications*, 13(1), jan 2017. [JCR-IF=1.250]
12. J.-B. Thomas, P.-J. Lapray, P. Gouton, and C. Clerc. Spectral Characterization of a Prototype SFA Camera for Joint Visible and NIR Acquisition. *Sensors*, 16(7):993, 2016. [JCR-IF=2.475]
13. P. Colantoni, J.-B. Thomas, and A. Trémeau. Sampling CIELAB color space with perceptual metrics. *International Journal of Imaging and Robotics*, 16(3):xx–xx, 2016.
14. M. Pedersen, D. Suazo, and J.-B. Thomas. Seam-Based Edge Blending for Multi-Projection Systems. *International Journal of Signal Processing, Image Processing and Pattern Recognition*, 9(4):11–26, 2016.
15. P. Zhao, M. Pedersen, J. Y. Hardeberg, and J.-B. Thomas. Measuring the Relative Image Contrast of Projection Displays. *Journal of Imaging Science and Technology*, 59(3):30404–1–30404–13, 2015. [JCR-IF=0.535]
16. P.-J. Lapray, X. Wang, J.-B. Thomas, and P. Gouton. Multispectral Filter Arrays: Recent Advances and Practical Implementation. *Sensors*, 14(11):21626, 2014. [JCR-IF=2.475]
17. X. Wang, J.-B. Thomas, J. Y. Hardeberg, and P. Gouton. Multispectral imaging: narrow or wide band filters? *Journal of the International Colour Association*, 12:44–51, 2014.
18. P. Colantoni, J.-B. Thomas, and J. Y. Hardeberg. High-end colorimetric display characterization using an adaptive training set. *Journal of the Society for Information Display*, 19(8):520–530, 2011. [JCR-IF=1.102]
19. J.-B. Thomas, A. Bakke, and J. Gerhardt. Spatial Nonuniformity of Color Features in Projection Displays: A Quantitative Analysis. *Journal of Imaging Science and Technology*, 54(3):30403–1–30403–13, 2010. [JCR-IF=0.535]
20. J.-B. Thomas, J. Y. Hardeberg, I. Foucherot, and P. Gouton. The PLVC display color characterization model revisited. *Color Research & Application*, 33(6):449–460, 2008. [JCR-IF=1.023]

21. J.-B. Thomas, P. Colantoni, J. Y. Hardeberg, I. Foucherot, and P. Gouton. A geometrical approach for inverting display color-characterization models. *Journal of the Society for Information Display*, 16(10):1021–1031, 2008. [JCR-IF=1.102]

Conference proceedings with peer-review

22. D. Gigilashvili, J.-B. Thomas, M. Pedersen, and J. Hardeberg. Material appearance: Ordering and clustering. *Electronic Imaging*, to appear, 2019.
23. D. Gigilashvili, J. B. Thomas, J. Hardeberg, and M. Pedersen. Behavioral investigation of visual appearance assessment. *Color and Imaging Conference*, 294-299, (1), 2018.
24. J.-B. Thomas, I. Farup. Demosaicing of Periodic and Random Color Filter Arrays by Linear Anisotropic Diffusion. *Color and Imaging Conference*, 203-210, (1), 2018.
25. L. C. Valeriano, J.-B. Thomas, and A. Benoit. Deep Learning for Dehazing: Comparison and Analysis. In *2018 Colour and Visual Computing Symposium (CVCS)*, pages 1–6, Sept 2018.
26. D. Gigilashvili, J. Y. Hardeberg, and J.-B. Thomas. Comparison of Mosaic Patterns for Spectral Filter Arrays. In *2018 Colour and Visual Computing Symposium (CVCS)*, pages 1–6, Sept 2018.
27. J.-B. Thomas, A. Deniel, and J. Y. Hardeberg. The *Plastique* collection: A set of resin objects for material appearance research. In *Proceedings of the XIV Conferenza del colore*, pages 1–12, Firenze, Italy, September 2018.
28. J. El Khoury, J.-B. Thomas, and A. Mansouri. *Colorimetric screening of the haze model limits*, volume 10884, pages 481–489. Springer International Publishing, Cham, June 2018.
29. H. A. Khan, J.-B. Thomas, and J. Hardeberg. *Towards highlight based illuminant estimation in multispectral images*, volume 10884, pages 517–525. Springer International Publishing, Cham, June 2018.
30. L. Cuevas Valeriano, J.-B. Thomas, and A. Benoit. Deep learning for dehazing: Benchmark and analysis. In *NOBIM*, Hafjell, Norway, March 2018. Slides there: <http://jbthomas.org/Conferences/2018NOBIMslides.pdf>.
31. S. Mihoubi, B. Mathon, J.-B. Thomas, O. Losson, and L. Macaire. Illumination-robust multispectral demosaicing. In *The six IEEE International Conference on Image Processing Theory, Tools and Applications IPTA*, Montreal, Canada, November 2017.
32. V. W. de Dravo, J. E. Khoury, J. B. Thomas, A. Mansouri, and J. Y. Hardeberg. An Adaptive Combination of Dark and Bright Channel Priors for Single Image Dehazing. *Color and Imaging Conference*, 2017(25):226–234, 2017.
33. P. Amba, J. B. Thomas, and D. Alleysson. N-LMMSE Demosaicing for Spectral Filter Arrays. *Color and Imaging Conference*, 61(4):40407–1–40407–11, 2017.
34. J.-B. Thomas, P.-J. Lapray, and P. Gouton. *HDR Imaging Pipeline for Spectral Filter Array Cameras*, pages 401–412. Springer International Publishing, Cham, 2017.
35. H. A. Khan, J. B. Thomas, and J. Y. Hardeberg. *Multispectral Constancy Based on Spectral Adaptation Transform*, pages 459–470. Springer International Publishing, Cham, 2017.
36. P.-J. Lapray, J.-B. Thomas, and P. Gouton. *A Database of Spectral Filter Array Images that Combine Visible and NIR*, pages 187–196. Springer International Publishing, Cham, 2017.
37. H. A. Khan, J.-B. Thomas, and J. Y. Hardeberg. *Analytical Survey of Highlight Detection in Color and Spectral Images*, pages 197–208. Springer International Publishing, Cham, 2017.
38. J.-B. Thomas, J. Y. Hardeberg, and G. Simone. *Image Contrast Measure as a Gloss Material Descriptor*, pages 233–245. Springer International Publishing, Cham, 2017.
39. K. Ansari, J.-B. Thomas, and P. Gouton. Spectral band Selection Using a Genetic Algorithm Based Wiener Filter Estimation Method for Reconstruction of Munsell Spectral Data. *Electronic Imaging*, 2017(18):190–193, 2017.
40. Z. Sadeghipoor, J.-B. Thomas, and S. Süsstrunk. Demultiplexing visible and Near-Infrared Information in single-sensor multispectral imaging. *Color and Imaging Conference*, 2016(2016):xx–xx, 2016.

41. J. El Khoury, J.-B. Thomas, and A. Mansouri. *A Color Image Database for Haze Model and Dehazing Methods Evaluation*, pages 109–117. Springer International Publishing, Cham, 2016.
42. P. Zhao, M. Pedersen, J. Y. Hardeberg, and J.-B. Thomas. Measuring the Relative Image Contrast of Projection Displays. *Color and Imaging Conference*, 2015(1):79–91, 2015.
43. J.-B. Thomas. Illuminant estimation from uncalibrated multispectral images. In *Colour and Visual Computing Symposium (CVCS), 2015*, pages 1–6, Aug 2015.
44. X. Wang, P. J. Green, J.-B. Thomas, J. Y. Hardeberg, and P. Gouton. *Computational Color Imaging: 5th International Workshop, CCIW 2015, Saint Etienne, France, March 24-26, 2015, Proceedings*, chapter Evaluation of the Colorimetric Performance of Single-Sensor Image Acquisition Systems Employing Colour and Multispectral Filter Array, pages 181–191. Springer International Publishing, Cham, 2015.
45. J. El Khoury, J.-B. Thomas, and A. Mansouri. Haze and convergence models: Experimental comparison. In *AIC 2015*, Tokyo, Japan, May 2015.
46. Y. Benezeth, D. Sidibé, and J.-B. Thomas. Background subtraction with multispectral video sequences. In *IEEE International Conference on Robotics and Automation workshop on Non-classical Cameras, Camera Networks and Omnidirectional Vision (OMNIVIS)*, pages 6–p, 2014.
47. P. Zhao, M. Pedersen, J. Y. Hardeberg, and J. B. Thomas. Image registration for quality assessment of projection displays. In *2014 IEEE International Conference on Image Processing (ICIP)*, pages 3488–3492, Oct 2014.
48. X. Wang, M. Pedersen, and J.-B. Thomas. The influence of chromatic aberration on demosaicking. In *Visual Information Processing (EUVIP), 2014 5th European Workshop on*, pages 1–6, Dec 2014.
49. J. El Khoury, J.-B. Thomas, and M. Alamin. Does Dehazing Model Preserve Color Information? In *Signal-Image Technology and Internet-Based Systems (SITIS), 2014 Tenth International Conference on*, pages 606–613, Nov 2014.
50. P.-J. Lapray, J.-B. Thomas, and P. Gouton. A Multispectral Acquisition System using MSFAs. *Color and Imaging Conference*, 2014(2014):97–102, 2014.
51. P. Zhao, M. Pedersen, J.-B. Thomas, and J. Y. Hardeberg. Perceptual Spatial Uniformity Assessment of Projection Displays with a Calibrated Camera. *Color and Imaging Conference*, 2014(2014):159–164, 2014.
52. J.-B. Thomas, P. Colantoni, and A. Trémeau. *Computational Color Imaging: 4th International Workshop, CCIW 2013, Chiba, Japan, March 3-5, 2013. Proceedings*, chapter On the Uniform Sampling of CIELAB Color Space and the Number of Discernible Colors, pages 53–67. Springer Berlin Heidelberg, Berlin, Heidelberg, 2013.
53. X. Wang, J.-B. Thomas, J. Y. Hardeberg, and P. Gouton. A Study on the Impact of Spectral Characteristics of Filters on Multispectral Image Acquisition. In S. W. Lindsay MacDonald, Stephen Westland, editor, *Proceedings of AIC Colour 2013*, volume 4, pages 1765–1768, Gateshead, Royaume-Uni, July 2013.
54. X. Wang, J.-B. Thomas, J. Y. Hardeberg, and P. Gouton. Median filtering in multispectral filter array demosaicking. volume 8660, pages 86600E–86600E–10, 2013.
55. X. Wang, J.-B. Thomas, J. Hardeberg, and P. Gouton. Discrete wavelet transform based multispectral filter array demosaicking. In *Colour and Visual Computing Symposium (CVCS), 2013*, pages 1–6, Sept 2013.
56. H. Peguillet, J.-B. Thomas, P. Gouton, and Y. Ruichek. Energy balance in single exposure multispectral sensors. In *Colour and Visual Computing Symposium (CVCS), 2013*, pages 1–6, Sept 2013.
57. P. Zhao, M. Pedersen, J. Y. Hardeberg, and J.-B. Thomas. Camera-based measurement of relative image contrast in projection displays. In *Visual Information Processing (EUVIP), 2013 4th European Workshop on*, pages 112–117, June 2013.
58. J.-B. Thomas and J. Gerhardt. Webcam based display calibration. *Color and Imaging Conference*, 2012(1):82–87, 2012.
59. J.-B. Thomas and C. Boust. Colorimetric Characterization of a Positive Film Scanner Using an Extremely Reduced Training Data Set. *Color and Imaging Conference*, 2011(1):152–155, 2011.

60. J. Gerhardt and J.-B. Thomas. Toward an automatic color calibration for 3D displays. *Color and Imaging Conference*, 2010(1):5–10, 2010.
61. P. Colantoni, J.-B. Thomas, and R. Pillay. Graph-based 3D Visualization of Color Content in Paintings. In A. Artusi, M. Joly, G. Lucet, D. Pitzalis, and A. Ribes, editors, *VAST: International Symposium on Virtual Reality, Archaeology and Intelligent Cultural Heritage - Short and Project Papers*. The Eurographics Association, 2010.
62. J.-B. Thomas. Controlling color in display: A discussion on quality. *CREATE*, 2010.
63. J.-B. Thomas and A. M. Bakke. Computational Color Imaging: Second International Workshop, CCIW 2009, Saint-Etienne, France, March 26-27, 2009. Revised Selected Papers. pages 160–169, Berlin, Heidelberg, 2009. Springer Berlin Heidelberg.
64. P. Colantoni and J.-B. Thomas. Image Analysis: 16th Scandinavian Conference, SCIA 2009, Oslo, Norway, June 15-18, 2009. Proceedings. pages 128–137, Berlin, Heidelberg, 2009. Springer Berlin Heidelberg.
65. A. M. Bakke, J.-B. Thomas, and J. Gerhardt. Common assumptions in color characterization of projectors. Number 3, pages 50–55, 2009.
66. J.-B. Thomas, P. Colantoni, J. Y. Hardeberg, I. Foucherot, and P. Gouton. An inverse display color characterization model based on an optimized geometrical structure. volume 6807, pages 68070A–68070A–12, 2008.
67. E. B. Mikalsen, J. Y. Hardeberg, and J.-B. Thomas. Verification and extension of a camera-based end-user calibration method for projection displays. *Conference on Colour in Graphics, Imaging, and Vision*, 2008(1):575–579, 2008.
68. J.-B. Thomas and A. Trémeau. A Gamut Preserving Color Image Quantization. In *Image Analysis and Processing Workshops, 2007. ICIAPW 2007. 14th International Conference on*, pages 221–226, Sept 2007.
69. J.-B. Thomas, J. Hardeberg, I. Foucherot, and P. Gouton. Additivity Based LC Display Color Characterization. Number 2, pages 50–55, 2007.
70. J.-B. Thomas, G. Chareyron, and A. Trémeau. Image watermarking based on a color quantization process. volume 6506, pages 650603–650603–12, 2007.

Books

71. V. Nozick and J.-B. Thomas. *Camera Calibration: Geometric and Colorimetric Correction*, pages 91–112. John Wiley & Sons, Inc., 2013.
72. V. Nozick and J.-B. Thomas. *Calibration et Rectification*, chapter 5, pages 105–124. Hermès, October 2013.
73. J.-B. Thomas, J. Hardeberg, and A. Trémeau. Cross-Media Color Reproduction and Display Characterization. In C. Fernandez-Maloigne, editor, *Advanced Color Image Processing and Analysis*, pages 81–118. Springer New York, 2013.
74. J.-B. Thomas. Colorimetric characterization of displays and multi-display systems. PhD, 2009.
75. J.-B. Thomas. Multispectral imaging for computer vision. In *Habilitation à diriger des recherches*. Université de Bourgogne, Franche-Comté, September 2018.

Technical reports

76. J.-B. Thomas, J. Hardeberg, and A. Trémeau. Draft Report on Cross-Media Color Reproduction and Display Characterization, 2012.
77. J.-B. Thomas. Calibration de caméras couleurs. Rapport technique et références, 2012.

Invited talks

78. J.-B. Thomas. Colorimetric characterization of displays and multi-display systems. November 2009.
79. J.-B. Thomas. Sensors based on MultiSpectral Filter Arrays. March 2014.
80. J.-B. Thomas. Filter array-based spectral imaging: Design choices and practical realization. September 2014.
81. J.-B. Thomas. MultiSpectral Filter Arrays: Design and demosaicing. November - December 2014.
82. J.-B. Thomas. MultiSpectral Filter Arrays: Tutorial and prototype definition. November - December 2016.
83. J.-B. Thomas, Y. Monno, and P.-J. Lapray. Spectral Filter Arrays Technology. In *Color and Imaging Conference, 25th Color and Imaging Conference, Society for Imaging Science and Technology*, Lillehammer, Norway, September 2017. Adapted from the T2C short course at Color and Imaging Conference, 25th Color and Imaging Conference, Society for Imaging Science and Technology, September 11-15, 2017, Lillehammer, Norway.
84. J.-B. Thomas. Spectral Filter Array Cameras. volume 7, page 30, Dagstuhl, Germany, 2018. Schloss Dagstuhl–Leibniz-Zentrum fuer Informatik.
85. J.-B. Thomas. Quantifying appearance. In *Forum Farge*, Bergen, Norway, March 2018. Invited talk to Seminar om farger og materialitet - Forum Farge i Bergen.
86. J.-B. Thomas. From spectral imaging to material appearance. In *Habilitation à diriger des recherches*, Dijon, France, September 2018. Présentation pour l'obtention de l'Habilitation à diriger des recherches.

PhD thesis completed under my co-supervision

87. P. Zhao. Colorimetric characterization of displays and multi-display systems. PhD, 2015.
88. X. Wang. Filter array based spectral imaging : Demosaicking and design considerations. PhD, 2016.
89. J. ElKhoury. Model and quality assessment of single image dehazing. PhD, 2016.
90. H.A Khan. Multispectral constancy for illuminant invariant representation of multispectral images. PhD, 2018.