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Full Professor

École Centrale de Lyon, France
LIRIS Lab (CNRS UMR 5205)

30 papers in international journals • **24 Q1 SJR** • **39** international conferences • **11** PhD co-supervisions (2 in progress) • **18 PhD / 2 HDR** examiner duties • **4** CoS chaired • **55** co-authors • **LIRIS lead, ANR AIDIBOP** (2025–2029)

*Full Professor at École Centrale de Lyon (Imagine team, LIRIS), I have been working for 25 years on Markov models for unsupervised learning, time-series filtering and image segmentation. My research now finds applications in healthcare and biology (**ANR AIDIBOP project**, with ISA / Hospices Civils de Lyon), smart cities, industrial construction (CIFRE SPIE, augmented reality, BIM) and human activity recognition.*

Career and Positions

25→29	Elected member (full-professor college) of the Studies Council (CE) of École Centrale de Lyon.
22→25	Recipient of the RIPEC C3 individual research bonus.
Sept. 20→	**Promotion** to Full Professor (1st class), institutional rank. **Head** of the Imagine team at LIRIS (2020–2024, Deputy: S. Duffner), 21 faculty members (8 full professors, 13 associate professors). As such, member of the LIRIS Scientific Council. Hiring of S. Parashar (CR CNRS, Jan. 2022) and F. Davoine (DR CNRS, Sep. 2023).
19→22	**Member** of the Council of the Mathematics and Computer Science Dept., ECL (Head: E. Mironescu).
18→19	6-month research leave (CRCT).
18→21	Recipient of the PEDR research bonus.
Jan. 17→18	**Member of the Thesis Committee** of Doctoral School ED 512 (InfoMaths).
17→20	**Deputy Head** of the Imagine team at LIRIS (Head: V. Églin). As such, member of the LIRIS Scientific Council.
16→19	**Deputy Director** of the Mathematics and Computer Science Dept., ECL (Head: I. Marion). **Site manager** for LIRIS at ECL. As such, member of the ECL Steering Committee (CoDir).
15→19	**Appointed member** of the LIRIS Lab Council.
Sept. 14→	**Full Professor** (CNU section 27) at ECL. Teacher and researcher at the Computer Science, Image and Information Systems Lab (LIRIS).
12→14	**Scientific Council** of École Centrale Marseille (HDR college).
09→12	Recipient of the PES research bonus.

2008 **Habilitation à Diriger des Recherches** (HDR), Aix-Marseille University.
TITLE : Contributions in statistical segmentation and 2D pattern recognition.
DATE : April 29, 2008.

05→09 Recipient of the PEDR research bonus.

05→06 1-year academic leave (*délégation*) at ENSI Tunis, hosted by the *Cristal* laboratory (Head: F. Ghorbel).

01→14 **Associate Professor** (CNU section 61) at École Centrale Marseille — now Centrale Méditerranée — (formerly École Nationale Sup. de Physique de Marseille). Teacher and researcher in computer science, signal and image processing within the *Multidimensional Signals Group* of INSTITUT FRESNEL.

99→01 **Post-doc** at ENST BRETAGNE, *Image and Information Processing* dept. (Head: C. Roux). Involved in the projects:

- SIR — Statistical classification of radar imagery using Markov models.
- MOSS — Multi-scale segmentation of oil spills.

1999 **PhD** from Université de Rennes 1, prepared in the *ITI* dept. of ENST-BRETAGNE, supervised by F. Ghorbel.
TITLE : Plane shape representation using approximations of the analytical Fourier-Mellin transform for image database indexing.
DATE : December 15, 1999.

92→96 **Engineering degree** in Telecommunications, TÉLÉCOM LILLE (Institut Mines-Télécom, now IMT NORD EUROPE).

Research activities

Research themes

Methodologies: Markov models (hidden chains/fields, pairwise and triplet, switching and fuzzy variants), Kalman-like filters for non-linear and non-Gaussian systems, copulas for dependency modeling, Bayesian inference and unsupervised learning, deep learning and computer vision, time-series modeling and filtering.

Application domains: healthcare and biology (mass-spectrometry analysis, antibiotic-resistance detection); smart cities and transportation (traffic state estimation and prediction); construction and industry (augmented reality, BIM-based progress monitoring, robotics); human activity and cognition (IMU-based locomotion recognition, infant visual development); biometrics and remote sensing (legacy).

Publication summary[1]

Papers in international peer-reviewed journals	30
Papers in national peer-reviewed journals	4
Papers in international conferences	39

Co-authored work with **55** researchers; main collaborators: *W. Pieczynski, F. Ghorbel, G. Mercier, L. Benyoussef, Z. Bouyahia*.

Journal ranking

[1] Preprints of journal papers are available here.

Table 1: Journal ranking - SJR, from http://www.scimagojr.com/.

Q1	Q2	Q3	Q4	Other	Total
24	5	1	0	0	30
80%	17%	3%	0%	0%	100%

PhD co-supervisions (11, of which 2 in progress)

In progress

- Mr **Léo Calmettes**, ENTPE. Started October 1, 2025. Rate: 50%. Co-supervisor: A. Ture Savadkoohi.
  Title: *Data-driven non-linear identification of structures.*
- Mr **Léo Schneider**, École Centrale de Lyon. Started November 1, 2023. Rate: 33%. Co-supervisors: J. Lemoine and Z. Bouyahia.
  Title: *Machine-learning-based analysis of Pseudo Mass-Spectrum Images for Targeted Peptides Identification.*

Defended

- Mr Mathis Baubriaud. CIFRE grant with SPIE, defended March 28, 2025. Rate: 50%. Co-supervisor: R. Chalon.
- Mr Liqun Liu. Grant CSC, defended November 26, 2022. Rate: 30%. Co-supervisor: R. Vuillemot.
- Mr Haoyu Li. Grant CSC, defended December 4, 2019. Rate: 50%. Co-supervisor: W. Pieczynski. Position: postdoc in China.
- Mrs Qinjie Ju. Grant CSC, defended April 9, 2019. Rate: 50%. Co-supervisor: R. Chalon. Position: ATER at INSA Lyon.
- Mrs Fei Zheng. Grant CSC, defended December 18, 2017. Rate: 70%. Co-supervisor: W. Pieczynski. Position: post-doc at INRIA Grenoble.
- Mr Valérian Némesin. Grant DGA/CNRS, defended September 30, 2014. Rate: 100%. Position: Research engineer.
- Mr William Ketchantang. CIFRE grant (ST MicroElectronics), defended January 29, 2008. Rate: 50%. Position: Research engineer at Morpho, Safran Group.
- Mr Cyril Carincotte. Ministerial grant, defended November 14, 2005. Rate: 50%. Position: Research engineer at MultiTel (Belgium).
- Mrs Rim Mezhoud-Khouaja. ENSI, Cristal Lab (Grift, Tunisia), defended February 11, 2005. Rate: 50%. Position: Assistant professor in Tunis.

Postdoctoral supervision

Ongoing

- Mrs **Rim Rekik**, postdoctoral fellow funded by ANR AIDIBOP. May 2026 – May 2028 (24 months).

Master's internship co-supervision

More than 15 internships co-supervised since 2004. Recent:

- Mr Omar Kosseentini (Apr–Jul 2026): modeling infant visual experience using deep learning – FIL VISIONS project.
- Mr Léo Calmettes (2025): deep learning on DIA data for detecting antibiotic resistance – PIMI project, co-supervised with Z. Bouyahia and L. Schneider.
- Mr Shreeniketh Arasanipalai Krishnan (2025): optimisation of laser ablation methods for surface super-hydrophobicity – Carnot 3DSurf project, co-supervised with A. Saidi.
- Mr Charles Gassot (2021): statistical filtering in switching Markov models, co-supervised with W. Pieczynski.

Service to the community

- **Deputy head then Head of the Imagine team @ LIRIS**: Deputy head from 2017 to 2020 (Head: V. Églin), then Head from 2020 to 2024 (Deputy: S. Duffner). As such, member of the LIRIS Scientific Council from 2015 to 2024.
- **ICPR'20 Bid Committee** - In 2016, member of the committee in charge of presenting the French bid to host the Int. Conf. on Pattern Recognition in Lyon in 2020. The bid was ranked second behind Milan.
- **PhD/HDR examiner** (reviewer or board member, external)
  - ✓ Mr Mathieu Adam, PhD, March 25, 2010 at TÉLÉCOM PARISTECH.
  - ✓ Mrs Noura Dridi, PhD, June 25, 2012 at TÉLÉCOM LILLE.
  - ✓ Mr Mohamed El Yazid Boudaren, PhD, January 11, 2014 at ÉCOLE POLYTECH. D'ALGER.
  - ✓ Mr Quoc Thong Nguyen, PhD, May 18, 2015 at TÉLÉCOM LILLE.
  - ✓ Mrs Atizez Hadrich, PhD, December 2, 2015 at UNIVERSITÉ DES SCIENCES DE SFAX.
  - ✓ Mr Faicel Chamroukhi, **HDR**, December 7, 2015 at UNIVERSITÉ DE TOULON.
  - ✓ Mrs Mouna Zitouni, PhD, May 23, 2017 at UNIVERSITÉ DES SCIENCES DE SFAX.
  - ✓ Mrs Meriem Yahiaoui, PhD, July 11, 2017 at TÉLÉCOM SUDPARIS.
  - ✓ Mrs Sawsen Rezig, PhD, July 13, 2017 at ENISE, Saint-Étienne.
  - ✓ Mr Tahar Nabil, PhD, January 9, 2018 at TÉLÉCOM PARISTECH.
  - ✓ Mr Yassine Lehiani, PhD, March 1, 2018 at ENSI TUNIS.
  - ✓ Mr Bassel Marhaban, PhD, Nov. 21, 2018 at UNIV. CÔTE D'OPALE.
  - ✓ Mrs Ines Sakly, PhD, Nov. 29, 2018 at ENSI TUNIS.
  - ✓ Mr Thomas Deregnaucourt, PhD, December 16, 2019 at UNIV. CLERMONT-AUVERGNE.
  - ✓ Mr Marwene Kechiche, PhD, Nov. 9, 2020 at ENISE, Saint-Étienne.
  - ✓ Mr Emmanuel Monfrini, **HDR**, Oct. 27, 2020 at TÉLÉCOM SUDPARIS.
  - ✓ Mrs Nour Ben Slimane Attaoui, PhD, July 20, 2022 at ENSI TUNIS.
  - ✓ Mrs Louise Bonfils, PhD, December 8, 2022.
  - ✓ Mrs Fatoumata Dama, PhD, December 15, 2022.
  - ✓ Mrs Katarina Morales, PhD, October 2, 2024.

- **Area Chair** for IEEE Int. Conf. on Image Processing (ICIP'15), Québec City, Canada.
- **Technical Program Committee member** for various conferences:
  - TAIMA'15/'18/'22, CSA'16, EUVIP'16, RFMI'16/'19, ACIVS'17/'25, GRETSI'19, CoDIT'19/'22.
- **Editorial activities**

  ✓ Editorial board member of **Sensors** (MDPI), 2020–2021. Handled around twenty papers submitted for review.

  ✓ Regular reviewer for: Automatica, IEEE Trans. Signal Processing, IEEE Signal Processing Letters, IEEE Trans. Automatic Control, IEEE Trans. Image Processing, Sensors, Signal Processing, Algorithms…
- **Hiring committees (CoS)** — *7 committees, including 4 chaired (2018–2026)*.

  ✓ **2026** — Chair of CoS for an associate professor position (CNU 63), INL / Centrale Lyon (re-launch after the 2025 unsuccessful recruitment).

  ✓ **2025** — Chair of CoS for an associate professor position (CNU 63), INL / Centrale Lyon.

  ✓ **2025** — Chair of CoS for an associate professor position (CNU 60-62), LTDS / Centrale Lyon-ENISE.

  ✓ **2025** — Member of CoS for an associate professor position (CNU 26-27), CITI / Télécom SudParis.

  ✓ **2019** — Member of CoS for a Math-Computer-Science position, École Centrale Casablanca (May 29, 2019).

  ✓ **2018** — Chair of CoS for a full professor position (CNU 63), INL / Centrale Lyon.

  ✓ **2016** — Member of CoS for an associate professor position (CNU 27), LIRIS / Centrale Lyon.
- **Research project reviewer**

  ✓ ANR proposals (CSOSG 2009, BLANC 2013).

  ✓ Fonds Québécois de la Recherche sur la Nature et les Technologies (FQRNT, 2009 and 2010).

  ✓ Academy of Finland, on-site review in Helsinki, February 3-5, 2016.

  ✓ HCERES evaluation of I3S Lab (Nice Sophia-Antipolis), November 13-15, 2016.

  ✓ European Commission expert, Marie Sklodowska-Curie ITN program, 2017 — 9 proposals reviewed in February 2017, plus a mid-term review in July 2020.

Software & open data

- **Research code** — implementations from co-supervised PhDs (Markov models, filtering, vision):

  github.com/SDerrode

  gitlab.ec-lyon.fr/sderrode
- **Open datasets**

  ✓ **MEP-seg** (M. Baubriaud, 2024) — 8 751 annotated synthetic images (semantic segmentation) generated from BIM models, 13 classes of MEP components. Outcome of the SPIE CIFRE PhD. LIRIS datasets library.

Funded research projects

Ongoing

- J. Lemoine (ISA, UCBL, scientific director), **S. Derrode** (LIRIS team lead) and Z. Bouyahia. *ANR AIDIBOP: AI-based Diagnosis of bloodstream Infection from digitized BOttom-up Proteomes*. Partners: Centrale Lyon, UCBL, Hospices Civils de Lyon. ANR AAPG 2025, Oct. 2025–Mar. 2029.
- J.-R. Hochmann (ISCMJ, co-PI), Z. Bouyahia (LIRIS, co-PI), **S. Derrode**, L. Papeo (ISCMJ). *VISIONS: Visual Input and Simulation in Infants' Observational Neurodevelopment Study*. FIL, 2025/2027 (€ 9.4 k).
- S. Valette (LTDS, PI), **S. Derrode** and A. Saidi. *Carnot 3DSurf: Sustainable and robust superhydrophobicity through hybrid additive manufacturing and biomimicry*. Partners: LTDS, MATEIS, LIRIS. Institut Carnot Ingénierie@Lyon, 2024/2026 (€ 248 k).

Past

- **S. Derrode** (PI), J. Lemoine (ISA) and Z. Bouyahia. *PIMI: Generation of Pseudo Mass-spectrum Images for targeted peptides Identification*. FIL, 2023/2025 (€ 10 k).
- Z. Bouyahia (PI), K. Al-Mashikhi, H. Haddad, N. Jabeur and **S. Derrode**. *InEPSHeD: An integrated educational platform for students with hearing difficulties*. Sultanate of Oman, 2021/2023 (20,000 OMR).
- Z. Bouyahia (PI), H. Haddad and **S. Derrode**. *Smart-City Taxis IoT: An IoT-based Framework for Balancing Taxis Service Supply-Demand*. Dhofar Univ., Oman (BFP/RGP/ICT/19/160), 12/2019–11/2021.
- Z. Bouyahia (PI), H. Haddad, N. Jabeur, **S. Derrode**, L. Benyoussef and A.U. Yasar. *RTCP-RD: Toward a Self-Organizing Traffic Control System*. Dhofar Univ., Oman (BFP/RGP/ICT/18/119), 07/2019–01/2021 (5,000 OMR).
- L. Chen (PI), E. Dellandréa and **S. Derrode**. *LabCom Arès: Machine learning and computer vision for Smart Robots*. ANR LabCom, partners: Centrale Lyon, Siléane, Renault, 2017/2020.
- M. Ardabillian (PI) and **S. Derrode**. *E-digit Arena V.2.0 (MACADAMS)*. Eurostars, partners: Centrale Lyon, Idiap, E.S. Concept SA, 2017/2018.
- R. Vuillemot (PI) and **S. Derrode**. *Visual exploration of parameter spaces for image analysis*. LIRIS, 2017/2018.
- R. Chalon (PI) and **S. Derrode**. *SIRIMA: Gaze tracking for advanced mobile interaction*. LIRIS, 2016/2017.

★ Representative publications

[2001] S. Derrode, F. Ghorbel.
Computer Vision and Image Understanding, 83(1):57–78. **SJR Q1** • **255 citations**.
Robust and efficient Fourier-Mellin transform approximations for invariant grey-level image description and reconstruction.
Foundational paper on analytical Fourier-Mellin decomposition for invariant image description and reconstruction. Still widely cited 25 years later in pattern-recognition research.
doi dblp pdf

[2004] S. Derrode, W. Pieczynski.
IEEE Trans. on Signal Processing, 52(9):2477–2489. **SJR Q1** • **156 citations**.
Unsupervised signal and image segmentation using pairwise Markov chains.
First methodological paper on pairwise Markov chains (PMC), a generalisation of hidden Markov chains that opened a 20-year line of work on pairwise / triplet / switching models.
doi dblp pdf

[2006] C. Carincotte, S. Derrode, S. Bourennane.
IEEE Trans. on Geoscience and Remote Sensing, 44(2):432–441. **SJR Q1** • **189 citations**.
Unsupervised change detection on SAR images using fuzzy hidden Markov chains.
First fuzzy Markov model applied to change detection in synthetic-aperture radar (SAR) imagery; reference work in remote sensing.
doi dblp pdf

[2017] I. Gorynin, S. Derrode, E. Monfrini, W. Pieczynski.
IEEE Trans. on Automatic Control, 62(2):853–862. **SJR Q1** • 20 citations.
Fast Filtering in Switching Approximations of Nonlinear Markov Systems With Applications to Stochastic Volatility.
Exact, fast filtering algorithm for non-linear Markov switching systems, an alternative to particle filters. Published in the leading control theory journal.
doi dblp pdf

[2019] H. Li, S. Derrode, W. Pieczynski.
Neurocomputing, 362:94–105. **SJR Q1** • **52 citations**.
An adaptive and on-line IMU-based locomotion activity classification method using a triplet Markov model.
Triplet Markov model applied to human activity recognition from inertial sensors, achieving $> 99\,\%$ accuracy across four activities. Most-cited post-2015 paper, showcasing recent applied research.
doi dblp pdf

[2026] M. Baubriaud, S. Derrode, R. Chalon, K. Kernn.
Results in Engineering, 30:110380. **SJR Q1** • recent publication.
AR-based MEP Progress Monitoring using BIM and Synthetic Data.
Outcome of M. Baubriaud's CIFRE PhD with SPIE: automated construction-progress monitoring system using augmented reality, combining BIM and synthetic data to train deep-learning models. Illustrates the recent thematic move into industrial construction.
doi pdf

Publication list

➽ PhD and HDR

[1] **Stéphane Derrode**, *Représentation de formes planes à niveaux de gris par différentes approximations de Fourier-Mellin analytique en vue d'indexation de bases d'images*, Thèse de 3e cycle, Université de Rennes

I, ENST BRETAGNE (Dpt *ITI*), Soutenue le 15 décembre 1999. Encadrée par F. Ghorbel (ENSI/GRIFT, Tunisie). Jury : R. Collorec (Prés.), B. Choquet (Rap.), A. Le Méhauté (Rap.), A. Hillion, C. Roux (Exam.), P. Haigron (Exam.) et F. Ghorbel (Exam.).

[2] **STÉPHANE DERRODE**, *Contributions en segmentation statistique d'images et reconnaissance de formes 2D*, Habilitation à Diriger des Recherches, Université Paul Cézanne d'Aix-Marseille, Institut Fresnel, Équipe GSM, Soutenue le 29 avril 2008. Jury: W. Pieczynski (Prés.), J.-P. Haton (Rap.), M. Acheroy (Rap.), E. Moreau (Rap.), J. Blanc-Talon (Exam.) et S. Bourennnane (Exam.).

Papers in peer-reviewed journals

[3] N. ABASSI, D. BENBOUDJEMA, **S. DERRODE** et W. PIECZYNSKI, *Optimal filter approximations in conditionally Gaussian pairwise Markov switching models*, IEEE Trans. on Automatic Control, vol. 60, no. 4, pp. 1104–1109, avril 2015. **SJR: Q1** doi dblp.

[4] M. BAUBRIAUD, **S. DERRODE**, R. CHALON et K. KERNN, *AR-based MEP progress monitoring using BIM and synthetic data*, Results in Engineering, vol. 30, p. 110380, 2026. **SJR: Q1** doi.

[5] L. BENYOUSSEF, C. CARINCOTTE et **S. DERRODE**, *Extension of higher-order HMC modeling with application to image segmentation*, Digital Signal Processing, vol. 18, no. 5, pp. 849–860, 2008. SJR: Q2 doi dblp.

[6] L. BENYOUSSEF et **S. DERRODE**, *Tessella-oriented segmentation and guidelines estimation of ancient mosaic images*, J. of Electronic Imaging, vol. 17, no. 4, octobre 2008. SJR: Q3 doi dblp.

[7] Z. BOUYAHIA, L. BENYOUSSEF et **S. DERRODE**, *Change detection in SAR images with a sliding hidden Markov chain model*, J. of Applied Remote Sensing, vol. 2, no. 1, p. 023526, 2008. SJR: Q2 doi.

[8] Z. BOUYAHIA, H. HADDAD, **S. DERRODE** et W. PIECZYNSKI, *Toward a Cost-Effective Motorway Traffic State Estimation From Sparse Speed and GPS Data*, IEEE Access, vol. 9, pp. 44631–44646, 2021. **SJR: Q1** doi dblp.

[9] Z. BOUYAHIA, H. HADDAD, **S. DERRODE** et W. PIECZYNSKI, *Traffic state prediction using conditionally Gaussian observed Markov fuzzy switching model*, J. Intell. Transp. Syst., vol. 27, no. 4, pp. 503–522, 2023. **SJR: Q1** doi dblp.

[10] Z. BOUYAHIA, **S. DERRODE** et W. PIECZYNSKI, *Filtering in Gaussian linear systems with fuzzy switches*, IEEE Trans. Fuzzy Syst., vol. 28, no. 8, pp. 1760–1770, 2020. **SJR: Q1** doi dblp.

[11] C. CARINCOTTE, **S. DERRODE** et S. BOURENNANE, *Unsupervised change detection on SAR images using fuzzy hidden Markov chains*, IEEE Trans. on Geosci. and Rem. Sens., vol. 44, no. 2, pp. 432–441, 2006. **SJR: Q1** doi dblp.

[12] M. CHERMI, **S. DERRODE** et F. GHORBEL, *Fourier-based geometric shape prior for snakes*, Pattern Recognition Letters, vol. 29, no. 7, pp. 897–904, mai 2008. **SJR: Q1** doi dblp.

[13] F. GHORBEL, **S. DERRODE**, R. MEZHOUD, T. BANNOUR et S. DHAHBI, *Image reconstruction from a complete set of similarity invariants extracted from complex moments*, Pattern Recognition Letters, vol. 27, pp. 1361–1369, septembre 2006. **SJR: Q1** doi dblp.

[14] I. GORYNIN, **S. DERRODE**, E. MONFRINI et W. PIECZYNSKI, *Fast Filtering in Switching Approximations of Nonlinear Markov Systems With Applications to Stochastic Volatility*, IEEE Trans. on Automatic Control, vol. 62, no. 2, pp. 853–862, février 2017. **SJR: Q1** doi dblp.

[15] I. GORYNIN, **S. DERRODE**, E. MONFRINI et W. PIECZYNSKI, *Fast smoothing in switching approximations of non-linear and non-Gaussian models*, Computational Statistics and Data Analysis, vol. 114, pp. 38–46, 2017. **SJR: Q1** doi dblp.

[16] Q. JU, R. CHALON et **S. DERRODE**, *Assisted Music Score Reading Using Fixed-Gaze Head Movement: Empirical Experiment and Design Implications*, PACM on Human-Computer Interaction Journal, vol. 3, no. EICS, pp. 3:1–3:29, 2019. **SJR: Q1** doi dblp.

[17] W. KETCHANTANG, **S. DERRODE**, L. MARTIN et S. BOURENNANE, *Pearson-based mixture model for color object tracking*, Machine Vision and Applications, Special issue on video surveillance research in industry and academia, vol. 19, no. 5-6, octobre 2008. SJR: Q2 doi dblp.

[18] H. LI, **S. DERRODE** et W. PIECZYNSKI, *An adaptive and on-line IMU-based locomotion activity classification method using a triplet Markov model*, Neurocomputing, , no. 362, pp. 94 – 105, octobre 2019. **SJR: Q1** doi dblp.

[19] H. LI, **S. DERRODE** et W. PIECZYNSKI, *Lower limb locomotion activity recognition of healthy individuals using semi-Markov model and single wearable inertial sensor*, Sensors, vol. 19, pp. 4242–1, septembre 2019. **SJR: Q1** doi dblp.

[20] V. Némesin et **S. Derrode**, *Robust blind pairwise Kalman algorithms using QR decompositions*, IEEE Trans. on Signal Processing, vol. 61, no. 1, pp. 5–9, 2013. **SJR: Q1** doi dblp.

[21] V. Némesin et **S. Derrode**, *Quality-driven real-time iris recognition from close-up eye videos*, Signal, Image and Video Processing Journal, vol. 10, no. 1, pp. 153–160, 2016. SJR: Q2 doi dblp.

[22] V. Némesin et **S. Derrode**, *Robust partial-learning in linear Gaussian systems*, IEEE Trans. on Automatic Control, vol. 60, no. 9, pp. 2518–2523, 2015. **SJR: Q1** doi dblp.

[23] **S. Derrode**, L. Benyoussef et W. Pieczynski, *Subsampling-based HMC parameters estimation with application to large data sets classification*, Signal, Image and Video Processing Journal, vol. 8, no. 5, pp. 873–882, 2014. SJR: Q2 doi dblp.

[24] **S. Derrode** et F. Ghorbel, *Robust and efficient Fourier-Mellin transform approximations for invariant grey-level image description and reconstruction*, Computer Vision and Image Understanding, vol. 83, no. 1, pp. 57–78, juillet 2001. **SJR: Q1** doi dblp.

[25] **S. Derrode** et F. Ghorbel, *Shape analysis and symmetry detection in gray-level objects using the Fourier-Mellin representation*, Signal Processing, vol. 84, no. 1, pp. 25–39, janvier 2004. **SJR: Q1** doi dblp.

[26] **S. Derrode** et G. Mercier, *Multiscale oil slick segmentation from SAR images using a vector HMC model*, Pattern Recognition, vol. 40, no. 3, pp. 1135–1147, mars 2007. **SJR: Q1** doi dblp.

[27] **S. Derrode** et W. Pieczynski, *Unsupervised signal and image segmentation using pairwise Markov chains*, IEEE Trans. on Signal Processing, vol. 52, no. 9, pp. 2477–2489, septembre 2004. **SJR: Q1** doi dblp.

[28] **S. Derrode** et W. Pieczynski, *Exact fast computation of optimal filter in Gaussian switching linear systems*, IEEE Signal Processing Letters, vol. 20, no. 7, pp. 701–704, juillet 2013. **SJR: Q1** doi dblp.

[29] **S. Derrode** et W. Pieczynski, *Unsupervised parameters estimation in generalized pairwise Markov chain with automatic copulas selection*, Computational Statistics & Data Analysis, vol. 63, pp. 81–98, juillet 2013. **SJR: Q1** doi dblp.

[30] **S. Derrode** et W. Pieczynski, *Unsupervised classification using hidden Markov chain with unknown noise copulas and margins*, Signal Processing, vol. 128, pp. 8–17, novembre 2016. **SJR: Q1** doi dblp.

[31] F. Zheng, **S. Derrode** et W. Pieczynski, *Parameter Estimation in Switching Markov Systems and Unsupervised Smoothing*, IEEE Trans. on Automatic Control, vol. 64, no. 4, pp. 1761–1767, avril 2019. **SJR: Q1** doi dblp.

[32] F. Zheng, **S. Derrode** et W. Pieczynski, *Semi-supervised optimal recursive filtering and smoothing in non-Gaussian Markov switching models*, Signal Processing, vol. 171, pp. 107511–1:107511–10, juin 2020. **SJR: Q1** doi dblp.

Papers in international conferences

[33] M. Baubriaud, **S. Derrode**, R. Chalon et K. Kernn, *Accelerating Indoor Construction Progress Monitoring with Synthetic Data-Powered Deep Learning*, dans *Proceedings of the 41st Int. Symp. on Automation and Robotics in Construction*, (pp. 792–799), Int. Association for Automation and Robotics in Construction (IAARC), Lille, France, June 2024. doi.

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