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Paris Brain
Institute



Inserm



BIOGRAPHY

Professor in BioMedical Image, Pattern Recognition, Machine / Deep Learning and Information / Data Analytics at Sorbonne University, and Principal Investigator at the Paris Brain Institute¹ within the INRIA (The French National Institute for Research in Digital Science and Technology) team "Aramis", my research is mainly focusing on microscopic biomedical image analysis, pattern recognition (including machine & deep learning) and computational integrative pathology, by exploring novel explainable artificial intelligence mechanisms.

Dr.habil. (2006) and Ph.D. (1997) at Univ. of Franche-Comté, Besançon, France, M.Sc. (DEA, 1993) at the University of Besançon, France and Engineer's degree (M.Eng. / Dipl.-Ing., 1992) at the Politehnica University Timisoara, Romania, I was Project Manager at General Electric Energy Products - Europe, before joining, in 1999, a chair of Associate Professor at University of Besançon with Research Fellowship at the FEMTO-ST Institute (CNRS UMR 6174).

From 2009 to 2015, I was Full Professor at the School of Computing, National University of Singapore². From 2005 to 2014, I actively participated to the development (up to the UMI CNRS level in 2007) and the management of the International Joint Research Unit "Image & Pervasive Access Lab" (IPAL) - CNRS UMI2955, being the Director (2008-2014) of this international research venture created with the support of the CNRS, the National University of Singapore (NUS), the Agency for Science, Technology and Research (A*STAR), the Univ. Grenoble Alpes, in Singapore. Active in scientific collaborations between France and Singapore, I participated to the creation (co-President: 2010-2014) of the R&D committee of the French Chamber of Commerce in Singapore (FCCS).

In 2012, with my team and under my leadership, we organized the first international medical challenge/benchmark in digital pathology. This challenge, entitled "Mitosis Detection in Breast Cancer Histological Images" (MITOS 2012), was held in the framework of the 21st International Conference on Pattern Recognition - ICPR 2012 (Tsukuba, Japan). After this first success, we organized a second event, in the area of Atypia assessment in Breast Cancer Histological Images (ATYPIA 2014), in the framework of ICPR 2014 (Stockholm, Sweden). These initiatives pathed the way towards a translational digital pathology, on the move now, towards a daily use in routine diagnostic (the first FDA approval came out in 2017, in this sense).

Member of the Advisory Board of the European Society of Digital and Integrative Pathology³

¹ Paris Brain Institute (Institut du Cerveau – ICM) - Stakeholders : French National Center for Scientific Research (CNRS UMR7225), French National Institute of Health and Medical Research (Inserm U1127), Sorbonne University (UM75) and AP-HP (Greater Paris University Hospitals).

² National University of Singapore (NUS) - top Public university in Asia, ranked #11 in QS Global World Rankings 2023: <https://www.topuniversities.com/universities/national-university-singapore-nus>

³ ESDIP- European Society of Digital Integrative Pathology: <http://digitalpathologysociety.org>

from 2020, I was a funding member (2016) before being the Vice-President (2016-2018) and the President (2018 to 2020) of this reputable academic society. In this context, I have been involved in the organization of the European Conference of Digital Pathology in Paris (ECDP 2014) and consistently supporting and participating to several ECDP conferences, since.

Between 2014 and 2016, I was a member of the first Executive Board of the University Institute of Health Engineering of the Sorbonne University, being also co-Director and co-initiator of a new B.Sc. Minor, dedicated to Innovation in Public Health. During the same period, I was research team co-leader at the Bioimaging Lab (Laboratoire d'Imagerie Biomédicale - LIB), a Sorbonne University – CNRS - Inserm joint research unit (CNRS UMR 7371, Inserm U1146).

From 2016 to 2018, I was Full Professor at the Pontifical Catholic University of Peru, being able to attract MICCAI 2020⁴ (4-8 Oct. 2020) to Lima, Peru – for the first time in Latin America. I was the general co-chair of this conference.

Last but not least, from 2018 to 2022, I was a member of MICCAI (Medical Image Computing & Computer Assisted Intervention) Board of Directors⁵. Besides being the MICCAI 2020 general chair, I was also involved in the MICCAI 2021 and MICCAI 2022 organization committees.

PROFESSIONAL & RESEARCH EXPERIENCE

Since May 2019 – **Sorbonne University, Paris Brain Institute (ICM)**, Paris, France

- **Principal Investigator, Paris Brain Institute (ICM - Inserm, CNRS, APHP), INRIA** team Aramis
- **Full Professor** @ Faculty of Science & Engineering, Engineering & Computer Science Dpt.
 - Courses & Labs:
 - Artificial Intelligence, Machine / Deep Learning (Master – Eng.) – coordinator
 - Medical and Biomedical Image Analysis (Master level – Eng.) – coordinator
 - Biomedical Image Analysis (Master level – Eng.) – coordinator
 - Computer Graphics (Master level – Computer Sciences) – coordinator
 - Object Oriented Programming (Master level – Eng.)
 - Programming (Licence level – all options)
- 2018-2022 – Member of the **Board of Directors**⁵ of the international **MICCAI Society** (Medical Image Computing and Computer Assisted Intervention)
- 2020 - **Advisory Board - ESDIP**³ (European Society of Digital Integrative Pathology)
- 2018-2020 **President** – European society **ESDIP**

Aug 2018 – May 2019: Kitview, Orqual group, Lyon, France

- **Scientific Director**: Installing the R&D HQ @ Insavalor Lyon (INSA Lyon's industrial ecosystem); building a local R&D team; setting-up a CIFRE PhD in collaboration with LIRMM CNRS lab, Montpellier, France; Initiating an R&D collaboration (Spin-Off) in Cluj-Napoca, Romania.

Sept. 2016 – Aug 2018: **Pontifical Catholic University of Peru (PUCP)**, San Miguel, Lima, Peru

- **Full Professor** @ Faculty of Science and Engineering, Department of Engineering;
- Masters and PhD supervision @ the Medical Imaging Lab;
- European & international initiatives around Computational and Integrative Pathology;
- Succeeding to the **MICCAI 2020** bid - Medical Image Computing & Computer Assisted Intervention (MICCAI 2020 conference was hosted for the first time by Latin America);
- 2018 – Member of **MICCAI Society Board of Directors** (Medical Image Computing and Computer Assisted Intervention)
- 2016-2018 - **ESDIP Vice-President** (Eur. Society of Digital Integrative Pathology).

Nov. 2011- Aug 2016: **University Pierre and Marie Curie**, Paris, France

- **Full Professor** @ Engineering Department;
- 2014-2016 - **Research Director** - cancer diagnosis and therapies team, **Biomedical Image Lab** (LIB⁶ - CNRS UMR 7371, Inserm U1146);

⁴ MICCAI 2020 : <https://www.miccai2020.org/en/ORGANIZING-COMMITTEE.html>

⁵ MICCAI Board of Directors : <http://www.miccai.org/about-miccai/board-of-directors/>

⁶ Lab. d'Imagerie Biomédicale, LIB - UMR CNRS UMR 7371, INSERM U1146 : <https://www.lib.upmc.fr/>

- 2008-2014 – **Director** of the **CNRS** research lab **IPAL** (UMI CNRS 2955) **Singapore**;
- **Executive Board, University Institute of Health Engineering (IUIS) of Sorbonne University**;
- Co-Director of a new Bachelor of Sciences minor: "Innovation in Public Health";
- 2016 – co-creation of the **ESDIP** (European Society of Digital Integrative Pathology);
- 2016-2018 **ESDIP Vice-President**.

July 2013 – July 2015: **National University of Singapore (NUS)**, Singapore

- **Full Professor** (adjunct) @ School of Computing, Computer Science Dpt.
- 2008-2014 – **Director** of the **CNRS** research lab **IPAL - UMI CNRS 2955 Singapore**;
- NUS SoC PhD co-supervision; NUS SoC PhD reviews and jury member.

Nov. 2011 – Sept. 2014: **French National Center for Scientific Research (CNRS)**

- **CNRS Research Director in Biomedical Engineering and Imaging**
- Second mandate as **IPAL UMI CNRS 2955 Director**.

Sept. 2008 – Sept. 2014: **Director, International Joint Research Lab IPAL UMI CNRS**, Singapore

- Restructuration around two impactful areas: biomedical image understanding and ambient assisted living; successful CNRS et al. evaluations in 2009 and 2014; growth of the lab by bringing in the University Pierre and Marie Curie and Mines-Télécom Institute.

Nov. 2009 – July 2013: **National University of Singapore (NUS)**, Singapore

- **Associate Professor** (adjunct) @ **School of Computing**, Computer Science Dpt.
- NUS SoC PhD students' co-supervision, PhD reviews and PhD juries
- Co-PI of the A*STAR SERC project "MMedWeb"
- Collaborator in a 2011 Singapore - MIT Alliance (SMA3)

Sept. 2005 – Nov. 2011: **French National Center for Scientific Research (CNRS)**

- **CNRS Research Fellow (Chargé de Recherche CNRS)**, creation and management of the Medical Image Indexing team at the International Research Unit PAL (UMI CNRS).
- Research focusing on Medical Image Analysis, Content Based Image Retrieval, Medical Ontologies, Medical Multimedia Fusion, Cognitive Vision.
- Participation @ CLEF international benchmark, Medical Image Indexing-Retrieval track.

1999 – 2008: **University of Franche-Comté**, Besançon, France

- **Associate Professor**, Faculty of Sciences & Technologies, Sciences & Technologies Dpt.
- Courses at Sciences and Techniques Dpt. in artificial intelligence, computer vision, diagnosis, prognosis, control sciences, fault detection, real time, non-linear and discrete event systems.
- Involved in the creation of the new LMD (Licence-Master-Doctorat) program.
- Research Fellow at **FEMTO-ST Institute**⁷ (UMR CNRS 6174), Besançon, France, in artificial intelligence applied to dynamic monitoring, diagnosis and prognosis, in the e-maintenance framework.

1998 – 1999: **General Electric Power Generation**⁸, Belfort, France (€1,2 B; 2000 pers.)

- **Project Manager**, General Electric Gas turbine department
- Design, technical, production, logistics, financial management gas turbines projects
- Reengineering, reorganization for General Electric group integration teams.
- Optimization of the management flow.
- Detection of financial niches and consolidation actions in the financial flow.
- Design of common project management and client management protocols between Alstom (old owner of the company) and General Electric (new owner of the company)

1997 – 1998: **Gaussin Manugistique**⁹, Héricourt, France, (M€10 /100 persons)

- **Logistics & Planning Manager**, Design & fabr. special trailers for industry, airport, seaport
- Logistics management, supply chain management
- Reengineering and management of a distributed subsidiary structure.

⁷ FEMTO-ST Institute (UMR CNRS 6174): <https://www.femto-st.fr/en>

⁸ General Electric Power Generation: <https://powergen.gepower.com/services/repair-and-maintenance/centers/belfort-france.html>

⁹ Gaussin Manugistique: <http://www.gaussin.com>

- 1993 – 1996: **University of Franche-Comté**, Univ. Institute Technology Belfort, France
- **Lecturer** (ATER - Attaché Temporaire d'Enseignement et de Recherche)
 - Dpt. Production System Management, University Institute of Technology of Belfort, University of Franche-Comté, Belfort, France
 - Logistic management, supply chain management courses and laboratory
 - Flexible production system laboratory (RFID, Programmable Logic Controllers programming, production flow management). I created a set of hands-on laboratories on a state-of-the-art flexible industrial production system.
- 1992: **Research Institute for Welding and Material Testing**¹⁰(ISIM), Timisoara, Romania
- **Research Fellow** in welding robotics.

PROFESSIONAL ORGANIZATIONS

Medical Image Computing and Computer Assisted Intervention (MICCAI Society)

- 2018-2022: member of the Board of Directors and General Chair of MICCAI 2020⁴

European Society of Digital and Integrative Pathology (ESDIP³)

- Since 2020 - ESDIP Advisory Board
- 2018 to 2020 - President & Member of the Executive Committee
- 2016 to 2018 - Vice-President & Member of the Executive Committee

French Chamber of commerce from Singapore (FCCS)

- 2011 to 2014 – co-President & Funding Member of the R&D Committee of the FCCS.

MOBILITY ACROSS THEMATIC AREAS

- 2016 - now Integrative Digital Pathology - Prof. @ Sorbonne University & Prof @ PUCP
- 2012 - 2016 Computational Pathology - Prof@UPMC & Prof@NUS & DR CNRS
- 2008 - 2012 BioMedical Imaging, Cognitive BioMedical Image, Stochastic Prior shape and Simplicial models- Prof@UPMC, Prof@NUS, DR&CR CNRS
- 2005 – 2008 Content-Based Medical Image Indexing and Retrieval reinforced by Semantic Approaches - A/Prof. @ UFC, A/Prof. @ NUS, RF @ CNRS
- 1999 – 2005 Dynamic Pattern Recognition for Diagnosis/Prognosis using dynamic recurrent neural networks - A/Prof. @ University of Franche-Comté
- 1992 – 1997 Stochastic Models Simplification and Control using Principal Component Analysis - PhD @ UFC, Lecturer @ Univ. Inst. Techn. Belfort, M.Sc. @ UTBM
- 1987 – 1992 Mechatronics - M.Eng. @ Politehnica University of Timisoara

GEOGRAPHIC MOBILITY

- 2019 - now Paris, France - Prof. @ Sorbonne University, PI @ Paris Brain Institute (ICM)
- 2018 - 2019 Lyon, France - Scientific Director @ Kitview, Orqual Group
- 2016 - 2018 San Miguel, Lima, Peru - Prof. @ Pontifical Catholic University of Peru (PUCP)
- 2014 – 2016 Paris, France - Prof. @ University Pierre and Marie Curie (UPMC Univ Paris 6)
- 2005 – 2014 Singapore - CNRS Senior Research Fellow & UMI CNRS Lab Director
- 1999 – 2005 Besançon, France - A/Prof. @ Univ. Franche-Comté
- 1998 – 1999 Belfort, France - Project Manager @ GE Energy Europe Technol. Center
- 1997 – 1998 Héricourt, France - Logistic & Planning Manager @ Gaussin S.A.
- 1993 – 1997 Belfort, France – PhD candidate @ University of Franche-Comté & Lecturer (ATER) @ Belfort-Montbéliard University Institute of Technology (IUT)
- 1992 – 1993 Belfort, France - Master of Sciences @ Univ. of Techn Belfort-Montbéliard (UTBM)
- 1987 – 1992 Timisoara, Romania - Master of Engineering @ Politehnica Univ. of Timisoara (UPT)

EDUCATION

¹⁰ Institutul National de Cercetare - Dezvoltare în Sudura și Încercări de Materiale (ISIM) Timisoara: http://www.isim.ro/isim_eng.htm

- 2006 **HDR (Accreditation to Supervise Research / Habilitation à Diriger des Recherches)**
 - Control and Computer Science
 University of Franche-Comté, Besançon, France
 - Dynamic Monitoring using Artificial Intelligence Techniques
 - Keywords: Dynamic Monitoring, Artificial Intelligence, Dynamic Neural Networks, Neuro-Fuzzy Systems, Fuzzy Petri Nets, Diagnosis, Prognosis.
- 1997 **Ph.D.** - Control and Computer Sciences,
 University of Franche-Comté, Besançon, France
 - Stochastic model reduction. Quasi-optimal management solution of an EDF (Electricity of France) Hydropower System (a system with 7 centrals).
 - Keywords: Stochastic Modelling, Markov Chains, Control, Reduction Methods, Singular Perturbations - Principal Component Analysis.
(Highest distinction - jury's congratulations – très honorable avec felicitations du jury).
- 1993 **M.Sc. (Master of Science)** - Control Sciences
 University of Technology of Belfort-Montbéliard, France
(major & with distinction – Très Bien).
- 1992 **Dipl. ing. (M.Eng. - Master of Engineering, Eng. Degree)** - Mechanical Manufacturing Engineering Technology
 Politehnica University of Timisoara, Romania
(Highest distinction – 10/10).

CURRENT SCIENTIFIC ACTIVITY

General interest: Responsible Artificial Intelligence, High-content Biomedical Image analysis

Responsible Artificial Intelligence, Explainable AI, Computer science for biomedical data, information and knowledge analysis / management. Integrative biomedical image analysis.

Specific area of expertise: Explainable Artificial Intelligence / Deep Learning, Integrative approaches for biomedical data analysis, Semantic-driven high-content image exploration

Explainable Artificial Intelligence / Deep Learning, Integrating heterogeneous models for omics and high-content imaging data understanding, with initial (not exclusive) focus on digital pathology. Semantic-driven, traceable deep-learning and scalable image analysis.

Keywords: High-content biomedical image analysis, integrative digital pathology, semantic-driven high-content biomedical image analysis, explainable and responsible deep learning / artificial intelligence, stochastic modelling and prior shapes, mathematical morphology on sparse-sets, content-based image retrieval.

SCIENTIFIC PUBLICATIONS

Exhaustive publication list: <http://daniraco.free.fr/publications.htm>

Google Scholar: <https://scholar.google.com/citations?user=2eBRLj0AAAAJ&hl=fr>

Research Gate: https://www.researchgate.net/profile/Daniel_Racoceanu

ORCID: <http://orcid.org/0000-0002-9416-1803>

Other repositories: <http://daniraco.free.fr/index.htm>

SCIENTIFIC SUPERVISION

- **Co-garantor Dr.habil – habilitation to manage scientific researches (HDR)**
 - o Dr Nicolas LOMENIE, A/Prof, Univ Paris Descartes, IPAL Res. Fellow Jan.2009-Sep.2012
- **Post-docs supervised**
 - o Dr Anuradha KAR (Sorbonne, 2021-), Alzheimer Disease Patients' Stratification
 - o Dr Janan ARSLAN (Sorbonne, 2021-), Modelling Metabolic Plasticity and Heterogeneity in Melanoma
 - o Dr Antoine VEILLARD (UPMC, 2013-2016), collaborative digital pathology

- Dr Ludovic ROUX (UJF, 2008-2014), semantic cognitive approaches
- Dr HUANG Chao-Hui (NUS and A*STAR, 2008-2014), cells tracking and WSI analysis.
- Dr Maria KULIKOVA (CNRS/UPMC 2010-2013) marked point process, nuclei detection.
- Dr Caroline LACOSTE (CNRS, 2005-2006) – marked point process angiography analysis

On-going and graduated PhDs: http://daniraco.free.fr/phd_supervised.htm

- On-going PhDs supervision:

- M. Mehdi OUNISSI, (Nov., 2021, Sorbonne Univ.) - Explainable Artificial Intelligence;
- M. Gabriel JIMENEZ, (Oct., 2021, Sorbonne Univ.) - Interpretable Deep Learning in Computational Histopathology for Alzheimer Disease Patients' Stratification Refinement.

- Graduated PhDs supervised / first position after PhD: <http://www.theses.fr/fr/?q=racoceanu>

- Ms. Oumeima LAIFA, (Sept. 2, 2019, Sorbonne Univ., Paris) - A Joint Discriminative-Generative Approach for Tumor Angiogenesis Assessment in Comput. Pathology;
- M. Lamine TRAORE, (Dec. 8, 2017, UPMC, Paris) - Semantic Modelling of a Histopathology Image Exploration & Analysis Tool, CEO smart'GRAD – UPMC spin-off;
- M. Bassem BEN CHEIKH (Sept. 26, 2017, UPMC, Paris) - Graph-based Mathematical Morphology for the Characterization of the Spatial Organization of Histological Structures in High-Content Images: Appl. Tumor Microenvironment in Breast Cancer;
- M. Olivier MORERE (June, 8, 2016, UPMC, Paris) - Deep Learning Compact and Invariant Image Descriptors for Instance Retrieval;
- Ms. Sreetama BASU (March 24th, 2015, NUS, Singapore) - Digital Reconstruction of Neuronal Structures from 3D Microscopy data / Research Fellow @ École Normale Supérieure (Ulm) Paris, Institute of Biology, Bioinformatics & Comput. Biology group;
- M. Antoine FAGETTE (June 16, 2014, UPMC, Paris) - Dense Crowd Analysis / Research Engineer THALES Singapore;
- M. Stéphane RIGAUD (March 10, 2014, UPMC, Paris) - Analysis-Synthesis Approach for Neurosphere Modelisation Under Phase-Contrast Microscopy / 3 years Research Fellow @ Institut Curie, Paris;
- M. Humayun IRSHAD (Jan. 20, 2014, UJF, Grenoble) - Automated Mitosis Detection in Color and Multispectral High-Content Images in Histopathology: Appl. to Breast Cancer Grading in Digital Pathology / Res. Fellow (3 years contract) @ Harvard Medical School, Boston, US;
- M. Antoine VEILLARD (Dec. 11, 2012, NUS, Singapore) - Kernel Methods for the Incorporation of Prior-Knowledge into Support Vector Machines. Application to whole slide image analysis for breast cancer grading / Research Fellow (3 years) @ Univ. Pierre and Marie Curie, Paris;
- Ms. Roxana TEODORESCU (11 Apr. 2011, Univ. Besançon) - Parkinson's Disease Prognosis using Diffusion Tensor Imaging Features Fusion / Research Fellow (3 years) @ Mount Sinai Hospital, New York, USA;
- Ms. Adina TUTAC (Oct. 22, 2010, Univ. Besançon) - Formal Representation and Reasoning for Microscopic Medical Image-Based Prognosis. Application to Breast Cancer Grading / R&D Manager @ Sionic SRL, Timisoara, Romania;
- M. Nicolas PALLUAT (Jan. 12, 2006, Univ. Besançon) - Dynamic monitoring using temporal neuro-fuzzy syst. / Res. Fellow (3 years contract) @ Univ. Federal Santa Catarina, Brazil;
- Ms. Eugenia MICA (Sept. 24, 2004, Univ. Besançon) - Discrete events systems monitoring using fuzzy Petri nets / A/Prof @ Univ. Valahia, Târgoviste, Romania;
- M. Ryad ZEMOURI (Nov. 28, 2003, Univ. Besançon) - Monitoring using dynamic neural networks A/Prof. CNAM, Paris, France.

SUCCESSFUL FUNDRAISING

Major competitive projects:

- **Big Brain Theory (BBT3), Paris Brain Institute - STRATIFIAD: Refining Alzheimer Disease Patients' stratification using effective, traceable and explicable artificial intelligence approaches in computational histopathology.**
 - o Leader of the project. Personal contribution: WSI analysis and XAI / DL approaches
 - o Partners: INRIA team Aramis lab, Alzheimer team and Data analysis center, Paris Brain Institute (CNRS UMR7225 – Inserm U1127)
 - o Duration: 2 years (July 2021 - June 2023). Budget 200 000 €.
- **AVIESAN (French Alliance for Life and Health Sciences) - ITMO Cancer - Mathematical Approaches to Modelling Metabolic Plasticity and Heterogeneity in Melanoma (MALMO)**
 - o Partners: Paris Brain Institute (CNRS UMR7225 – Inserm U1127), University of Montpellier (LPHI - CNRS UMR5235, LIRMM - CNRS UMR5506) and IRCM – Inserm U1194
 - o Role: PI. Personal contribution: traceable DL for tumor characterization and genesis modeling
 - o Duration: 3 years (Nov. 2020 – Oct. 2023). Budget: 400 000 €
- **EU EIT Health: PAPHOS - Platform for advanced prescriptive health operational system**
 - o Granted by the European Institute of Innovation & Technology (EIT) - EIT Health
 - o Big data in healthcare (digital pathology, sleep apnea)
 - o URL - PAPHOS project: <https://www.eithealth.eu/paphos>
 - o URL - EIT Health: <http://eit.europa.eu/eit-community/eit-health>
 - o Consortium: ATHOS Spain SAE, BULL SAS, CEA, Univ. Pierre et Marie Curie, Univ. Joseph Fourier (UJF), Univ. Politécnica de Madrid, GMV, Karolinska Institutet (KI), AVENTYN.
 - o Role: PI. Personal contribution: Digital Pathology use-case with Pitié-Salpêtrière Hosp., Paris.
 - o Duration: 2 years (Jan. 2016 - Dec. 2018). Budget: 1.400.000 €.
- **Medical Research Foundation (FRM, France); Bio-Engineering for health**
 - o **Multiparametric ultrasonic classification to evaluate tumor progression**
 - o Partners: Sorbonne Universités, Hôpital de la Pitié-Salpêtrière, Bioacoustics Research Lab / Univ. Illinois Urbana-Champaign
 - o Duration: 3 years (2014-2017). Role Collaborator. Personal contribution: WSI analysis using DL
- **NIH (Nat. Institute Health, USA) - Advanced Ultrasonic Evaluation of Sentinel Lymph Nodes**
 - o Consortium: Riverside Research, New York NY USA, Hawaii University, Honolulu, USA, Kuakini Medical Center, Honolulu, USA, Duration 5 years (2011-2016);
 - o Role: collaborator. Personal contribution: WSI analysis for the classification of metastatic regions in lymph nodes, in correlation with ultrasound modalities.
- **IAMS: Integrated autonomous microscopy syst. for imaging anatomies complex 3D cell**
 - o Granted by **A*STAR/JCO** Joint Council Office SERC-BMRC/A*STAR Singapore;
 - o Involving IPAL and four A*STAR institutes (the Institute for Infocomm Research I2R/SERC, the Bioinformatic Institute BII/BMRC, the Institute of Molecular and Cell Biology IMCB/BMRC and the Institute of Medical Biology IMB/BMRC);
 - o Duration: 3 years (2013 – 2016). Role: PI. Personal contribution: microscopic images analysis.
- **FlexMIm: Collaborative Digital Pathology**
 - o Funded by the Consolidated Interministerial Fund, French Ministry of Industry (MINEFE);
 - o Project involving Orange Healthcare, Tribvn (SME), Pertimm (SME), the University Pierre and Marie Curie, the Univ. Paris Diderot and the Assistance publique – Hôpitaux de Paris (AP-HP), the public hospital system of the city of Paris and its suburbs;
 - o Duration: 3,5 years (2013-2016), Grant: 1.679.000 €, Pers. role: **Principal Investigator**.
- **MICO: COgnitive Microscope: Cognition-driven visual explorer in histopathology**
 - o Granted by the Techn. for Health program (TecSan - Technologies pour la Santé) of the **French National Research Agency** (ANR - Agence Nationale de la Recherche);
 - o Partners: LIP6 -UPMC, TRIBVN, THALES-TCF, Pitié-Salpêtrière Hospital, AGFA Healthcare;
 - o Duration: 3,5 years (01/2011-07/2014). Grant: 1.160.000 €.
 - o Personal role: **Project Director & Principal Investigator**
- **Intel. Vision Quantitative Microscopy Neural Stem Cells Progenitor Growth Differentiation**
 - o Project funded by **A*STAR/JCO** (Joint Council Office SERC-BMRC/A*STAR) Singapore Involving three A*STAR institutes (Institute for Infocomm Research I2R/SERC, Bioinformatics Inst. BII/BMRC and the Inst. of Medical Biology IMB/BMRC);
 - o Duration: 3,5 years (12/2009 – 05/2013). Grant: 741.000 \$\$\$. Personal role: PI.
- **C0604 - EURO-TELEPATH - “Telepathology Network in Europe”**

- **COST (European Cooperation in Science and Technology) Action;**
- Partners: Spain, France, Germany, Greece, Italy, Switzerland, Croatia, Finland, Lithuania, Nederland, Norway, Poland, Portugal, United Kingdom;
- Duration: 4 years (2007-2011). Personal role: expert in semantic imaging
- **MMedWeb (Multimedia Medical Conceptual Web for Intelligent Information Access)**
 - **A*STAR – SERC** grant - Science & Engineering Research Council, Agency for Science, Technology and Research – Singapore;
 - Partners: CNRS, NUS, I2R/A*STAR, Nat. Univ. Hospital (NUH), National Healthcare Group, Singapore General Hospital (SGH);
 - Duration: 3 years (2007-2010). Grant: 530.840 S\$. Personal role: **Principal Investigator.**
- **ONCO-MEDIA (Ontology and COntext related MEDical image Distributed Intel. Access)**
 - **6th ICT-ASIA programme**
 - 11 International partners: Singapore (IPAL), France (CREATIS, LIRIS, LIP6, I3S), Switzerland (UNIGE), Taiwan (NTU), Philippine (ATENEO), Japan (CIGG);
 - Duration of the project: 2 years (2006-2007; 2009-2010);
 - Personal role: **Project Director & Principal Investigator**

AWARDS:

1st Place Prize - 2019 IEEE Eng. in Medicine and Biology Prize: Irshad, H., ... Racoceanu, D. (2014). Methods for Nuclei Detection, Segmentation, and Classification in Digital Histopathology: A Review - Current Status & Future Potential. *IEEE Reviews on Biomedical Engineering*.

CERTIFICATES:

June 2014, Certif. in Advanced English (CAE), Cambridge English Language Assessment