

Ousmane THIARE, MSc., PhD.

Full Professor of Exceptional class in Computer Science

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LANGUAGES

French : advanced
English : fluency

ABOUT ME

Professor Ousmane THIARE has spent most of his academic and professional career at **Gaston Berger University (GBU)** of Saint-Louis Senegal, an institution of excellence created in January 1990 and Senegal's second public university.

Ousmane THIARE joined GBU in October 1994 and obtained a Diploma of Advanced Studies (DEA) in Applied Mathematics in 2000, after a clear course of study.

In 2002, he decided to strengthen his knowledge outside Senegal, notably at the Polytechnic School of the François Rabelais University of Tours (Polytech'Tours), where he obtained a second DEA, this time in Computer Science. He finished his studies in France with a PhD in Computer Science at the CY Cergy Paris University in 2007.

In parallel to this brilliant career, Ousmane THIARE was already teaching courses at the same university that so brilliantly trained him, GBU. He was first a full-time Computer science Assistant in 2002, a full-time Assistant Professor in 2008 and then an HDR Senior Lecturer in Computer science between 2010 and 2015. He continues this teaching experience in Nigeria at the African University of Science and Technology (AUST) in Abuja where he has been an Associate Professor since April 2014.

It is in July 2015, that he is consecrated Full Professor of Universities at GBU. In April 2021, Ousmane THIARE becomes a Full Professor of the Universities of Exceptional class !

In addition to this academic experience, Ousmane THIARE was Head of the Computer science department at the Faculty of Applied Sciences and Technology (UFR SAT) between 2007 and 2009, Coordinator of the Post-Graduate in Computer Science in 2011 and then in 2013, Director of the Ousmane Seck Computer Centre. The IT Computing centre has a teaching, research and training mission. It is also responsible for the implementation of the University's computerization program.

Appointed Expert Evaluator of the National Authority for Quality Assurance in Higher Education (ANAQ-Sup) since 2014, he was also a member of the Scientific and Pedagogical Council of the Doctoral School of Sciences and Technologies of GBU between 2014 and 2019.

Professor THIARE has also been the Director of the African Centre of Excellence for Mathematics, Informatics and Information and Communication Technologies (ACE-MITIC) between 2017 and 2020. ACE-MITIC is an ambitious World Bank project with a budget of USD 8 million to change the dynamics of access to employment by training a quality workforce while connecting all actors, applicants and other service providers in the fields of Mathematics, Computer Science and Information and Communication Technologies (ICT). Areas in which Gaston Berger University and its Professor have proven expertise.

It is on the strength of this rich but comprehensive experience that Professor Ousmane THIARE was appointed, in May 2018, Rector of Gaston Berger University of Saint Louis, President of the Academic Council. As Rector, President of the Academic Council, he is in charge of the study programs at Gaston Berger University. It shall exercise the management function of the University and shall be responsible for the formulation and implementation of appropriate policies and operational decisions relating to the higher education institution, and in accordance with the University's strategic plan. He is responsible for the implementation of innovative programs and the adoption of new advanced technologies by the University in order to make it competitive on a global scale. It is responsible for establishing and maintaining mutually beneficial relationships with educational and research institutions, government institutions,

commercial enterprises, industrial, professional, social, civil society and cultural institutions at the regional and international levels. He is also the chief authorizing officer of the university's budget.

In December 2021, Professor Ousmane THIARE was elected Full Member of the **National Academy of Sciences and Techniques of Senegal (ANSTS)** in the Fundamental, Applied and Innovation Sciences Section (FAISS).

From November 2019 to June 2022, Professor Ousmane THIARE led the team that worked on the Scholars Program of the Mastercard Foundation. This program resulted in a funding, over nine (09) years of an amount of USD 37,786,408 or 23.7 billion FCFA. The Scholars Program at the Universit Gaston Berger (UGB) aims to train 1,000 Scholars, 70% of whom will be women, at the undergraduate level in the fields of digital, agriculture, health and engineering by 2030 and to facilitate their transition to dignified and fulfilling work so that they can serve their communities and contribute to Africa's development. At the end of the proposed program, Scholars will become committed leaders in their communities and participate in developing their countries and Africa.

In June 2022, Professor Ousmane THIARE was appointed Director General of the National Cyber-infrastructure for Higher Education, Research and Innovation (CINERI).

However, Ousmane THIARE remains active in research in his preferred fields, namely: distributed systems, distributed resource management, computing grids, cloud computing, mobile ad hoc networks, wireless sensor networks and the Internet of Things (IoT). His various works are published in numerous international journals and conferences that can be discovered by browsing his ⇒ [web page](#).

CURRENT POSITIONS

2022- Date **Director General, National Cyber-infrastructure for Higher Education, Research and Innovation (CINERI)**

- Manage the supercomputer and the datacenter for higher education and research;
- Manage the national scientific computing capacities including the TAOUEY supercomputer;
- Implement and administer the Integrated Governance System for Higher Education and Research (SIGESR);
- Manage the infrastructure of the national education and research network (snRER);
- Set up shared infrastructures for education and research;
- Contribute to the valorization of scientific research and innovation in the public and private sectors;
- Contribute to the valorization of scientific research and innovation in the public and private sectors;
- To ensure the operation of the National Education and Research Network;
- Ensure the administration and management of the national information system for Higher Education, Research and Innovation;
- To propose digital services to public and private companies.

2018- Date **Vice-Chancellor (Rector), President of the Academic Council Gaston Berger University of Saint-Louis Senegal**

- To represent the University in all bodies as President of the Academic Council;
- Conclude agreements, contracts or other arrangements between the University and other institutions of higher education competent bodies for educational, research, management or funding purposes;
- Supervising all university programs;
- Coordinate the development of a strategic plan for the operational implementation of Gaston Berger University and ensure that it is translated into appropriate and realistic goals and objectives to be implemented smoothly and successfully;
- Prepare the meetings of the Board of Directors and to ensure the execution of its deliberations;
- Present an annual activity report to the Board of Directors;
- Chair the meetings of the Academic Council and to ensure the execution of its deliberations;
- Develop the university's strategic development plan and quality assurance policy and ensure their implementation once approved by the Board of Directors;
- Ensure the proper administrative and accounting management of all human, material, financial and information resources of the university.

2022- Date **Scientific and Technical Director** EUROPEAN RESEARCH PROJECT (ID: 101059232 - Call: HORIZON-CL6-2021-FARM2FORK-01)
URBANE: One Health approaches to support agroecological transformation of peri-urban farming

2022- Date **Director of publication of Journal Global Africa** GASTON BERGER UNIVERSITY OF SAINT-LOUIS SENEGAL

2021- Date **Full Professor of Exceptional class in Computer Science** DEPARTMENT OF COMPUTER SCIENCE - FACULTY OF APPLIED SCIENCES AND TECHNOLOGY - GASTON BERGER UNIVERSITY OF SAINT-LOUIS SENEGAL

- Implementation of research projects;
- Organization of seminars;
- Supervise PhD thesis;
- Teaching in different modules.

2021- Date **Elected member of National Academy of Sciences and Techniques of Senegal (ANSTS) Fundamental, Applied and Innovation Sciences Section (FAISS)** NATIONAL ACADEMY of SCIENCES and TECHNIQUES of SENEGAL

- Assist and advise the Senegalese State and public and private institutions in the definition and implementation of the National Science and Technology Policy;
- Encourage scientific research, to initiate, impulse and develop programs in the fields of Science and Technology;
- Contribute to the promotion and valorization of the results of Research;
- Stimulate scientific vocations among young people and women;
- Facilitate exchanges with similar organizations;
- Award prizes and scholarships to persons who have distinguished themselves by their work;
- Contribute to the development of scientific culture and to the rapprochement between Science and Society.

- 2021- Date **Committee Research Member and Fellow** **Pan-African Scientific Research Council**
- 2016- Date **Expert evaluator ANAQ-Sup** MINISTRY OF HIGHER EDUCATION, RESEARCH AND INNOVATION SENEGAL
- Evaluate and accredit training programs in Senegalese universities.
- 2013- Date **Researcher at UMMISCO** MATHEMATICAL and COMPUTER MODELLING UNIT of COMPLEX SYSTEMS
- 2015- Date **International expert in institutional assessment of training courses and / or research programs** CAMES (AFRICAN AND MALAGASY COUNCIL FOR HIGHER EDUCATION)
- Evaluate and accredit international training programs in the CAMES space universities.
- 2013- Date **Associate Professor in Computer science** AFRICAN UNIVERSITY OF SCIENCE AND TECHNOLOGY
AUST Abuja Campus Nigeria

PAST POSITIONS

- 2015- 2021 **Full Professor in Computer Science (GAMES/LAFPT 2015)** DEPARTMENT OF COMPUTER SCIENCE - FACULTY OF APPLIED SCIENCES AND TECHNOLOGY - GASTON BERGER UNIVERSITY OF SAINT-LOUIS SENEGAL
- Implementation of research projects;
 - Organization of seminars;
 - Supervise PhD thesis;
 - Teaching in different modules.
- 2017-2020 **Director of ACE-MITIC** GASTON BERGER UNIVERSITY OF SAINT-LOUIS SENEGAL
- Enable students to have an adequate training environment with high-level computer, electronics and telecommunications laboratories;
 - Enable research teachers to enhance their skills in training and research;
 - Integrate Mathematics and ICT into a research / training center with institutions, research centers, private companies and other relevant partners.
- 2018-2021 **Scientific and Technical Director** EUROPEAN RESEARCH PROJECT (ID: 780229 - Call: H2020-ICT-2017-1)
WAZIHUB: Accelerating Open IoT and Big Data Innovation in Africa
- 2016-2019 **Scientific and Technical Director** EUROPEAN RESEARCH PROJECT (ID: 687607 - Call: H2020-ICT-2015)
WAZIUP: Open Innovation Platform for IoT-Big Data in Sub-Sahara Africa

- 2010-2015 **Associate Professor in Computer Science (GAMES/LAFMC Cote A)** FACULTY OF APPLIED SCIENCES AND TECHNOLOGY - GASTON BERGER UNIVERSITY OF SAINT-LOUIS SENEGAL
- Implementation of research projects;
 - Organization of seminars;
 - Supervise PhD thesis;
 - Teaching in different modules.
- 2014-2019 **Member of the Scientific and Pedagogical Council of the Doctoral School Sciences and Technologies** GASTON BERGER UNIVERSITY OF SAINT-LOUIS SENEGAL
- Assign research grants in the different disciplines;
 - Propose and select candidates for the different prizes;
 - Validate and follow the different teaching modules;
 - Implementation and follow-up of PhD Thesis.
- 2013-2018 **Coordinator** of the Faculty of Basic and Applied sciences at **USSEIN** UNIVERSITY OF SINE-SALOUM EL HADJI IBRAHIM NIASS OF KAOLACK (USSEIN) SENEGAL
- Implementation of USSEIN;
 - Establishment of the Faculty of Basic and applied sciences;
 - Implementation of new training offers;
 - Implementation of training models and syllabus.
- 2012-2014 **Coordinator of the MSc. in Computer Science** FACULTY OF APPLIED SCIENCES AND TECHNOLOGY - DEPT. OF COMPUTER SCIENCE - GASTON BERGER UNIVERSITY OF SAINT-LOUIS SENEGAL
- Establish timetables and organize pedagogical distribution;
 - Supervise the updates, the management of the rooms in connection with the secretariat;
 - Supervise the monitoring of absences;
 - Organizing graduation juries.
- 2013-2016 **Director of the IT Computing Center** GASTON BERGER UNIVERSITY OF SAINT-LOUIS SENEGAL
- Definition and Implementation of the University's IT Policy;
 - Establishment of partnerships;
 - Implementation of IT projects;
 - Search for funding;
 - Project manager for the implementation of the GIS of the University;
 - Implementation and management of all the university's collective IT resources, and ensuring their coordination with regional and national networks;
 - Ensure the coherence of all IT resources (hardware, software, human resources) of the University;
 - Development of the institution's IT standards and norms, compatible with the recommendations of the national working groups;
 - Participate in the preparation of the establishment contract with regard to IT resources;
 - Management of the IT team.

2007-2009 **Head of the Computer Science department** FACULTY OF APPLIED SCIENCES
AND TECHNOLOGY - DEPT. OF COMPUTER SCIENCE - GASTON BERGER UNIVERSITY OF
SAINT-LOUIS SENEGAL

- Ensure the organization and operation of the teaching;
- Collaborate with educational managers;
- Supervise knowledge assessments;
- Organizing graduation juries.

2008-2010 **Assistant Professor in Computer Science (CAMES/LAFMA Cote A)** FACULTY
OF APPLIED SCIENCES AND TECHNOLOGY - DEPT. OF COMPUTER SCIENCE - GASTON
BERGER UNIVERSITY OF SAINT-LOUIS SENEGAL

- Provide supervised and practical work of some of the courses taught;
- Teaching some modules;
- Supervising students.

2005-2008 **Assistant Lecture (Tenure) in Computer Science** FACULTY OF APPLIED SCIENCES
AND TECHNOLOGY - DEPT. OF COMPUTER SCIENCE - GASTON BERGER UNIVERSITY OF
SAINT-LOUIS SENEGAL

- Provide supervised and practical work of some of the courses taught.

2002-2005 **Assistant Lecturer in Computer Science** FACULTY OF APPLIED SCIENCES
AND TECHNOLOGY - DEPT. OF COMPUTER SCIENCE - GASTON BERGER UNIVERSITY OF
SAINT-LOUIS SENEGAL

- Provide supervised and practical work of some of the courses taught.

EDUCATION

2003-2007 **Ph.D. in Computer Science** DEPARTMENT OF COMPUTER SCIENCE
CY Cergy Paris University France

2001-2002 **Post-Graduate (DEA) in Computer Science** POLYTECH' TOURS
University François Rabelais of Tours France

1999-2000 **Post-Graduate (DEA) in Applied Mathematics** UFR MAI
Gaston Berger University of Saint-Louis Senegal

1998-1999 **Graduate (AEA) in Applied Mathematics** UFR MAI
Gaston Berger University of Saint-Louis Senegal

1997-1998 **M.Sc. (Maîtrise) in Applied Mathematics** UFR MAI
Gaston Berger University of Saint-Louis Senegal

1996-1997 **B.Sc. (Licence) in Applied Mathematics** UFR MAI
Gaston Berger University of Saint-Louis Senegal

1995-1996 **Associates Degrees II (DEUG II) in Applied Mathematics** UFR MAI
Gaston Berger University of Saint-Louis Senegal

1994-1995 **Associates Degrees I (DEUG I) in Applied Mathematics** UFR MAI
Gaston Berger University of Saint-Louis Senegal

RESEARCH INTERESTS

- Internet of Things (IoT)
- Wireless Sensor Networks (WSN)
- Mobile and Ad Hoc Networks (MANET)
- Parallel and Distributed Systems

- Peer-to-Peer (P2P) Systems
- Routing and Data replication
- Grid and Cloud computing
- Circular economy

RESEARCH PROJECTS

- 1 Scientific and Technical Director** at Gaston Berger University of the European Research Project (ID: 101059232 - Call: HORIZON-CL6-2021-FARM2FORK-01) "**URBANE: ONE HEALTH APPROACHES TO SUPPORT AGROECOLOGICAL TRANSFORMATION OF PERI-URBAN FARMING**".
Estimated Project Cost: 5,015,233.75 €. 2018-07-01 - 2026-06-30.
- 2 Scientific and Technical Director** at Gaston Berger University of the European Research Project (ID: 780229 - Call: H2020-ICT-2017-1) "**WAZIHUB: ACCELERATING OPEN IOT AND BIG DATA INNOVATION IN AFRICA**".
Estimated Project Cost: 2,367,606.88 €. 2018-05-01 - 2021-07-31.
- 3 Director** of the African Center of Excellence for Mathematics, Informatics and Communication Technologies (**CEA-MITIC**).
Project funded by the World Bank. Estimated Project Cost: 8 million US Dollar. 05-04-2017 - 31-03-2020.
- 4 Scientific and Technical Director** at Gaston Berger University of the European Research Project (ID: 687607 - Call: H2020-ICT-2015) "**WAZIUP: OPEN INNOVATION PLATFORM FOR IOT-BIG DATA IN SUB-SAHARA AFRICA**".
Estimated Project Cost: 2,799,662.50 €. 2016-01-01 - 2019-01-01.
- 5 Research Project Leader** of "Wireless Sensor Networks applied to large-scale environmental surveillance of insects invasion in Sub-Sahara Africa". Research project funded by FIRST (Fond d'Impulsion de la Recherche Scientifique et Technique).
Funding of 30,000 €. 2013-01-06 - 2017-31-05.
- 6 Member of the Research Project** "Wireless Sensor Networks and RFID technology against cattle theft".
Research project funded by FIRST (Fond d'Impulsion de la Recherche Scientifique et Technique). Funding of 25,000 €. 2014-12-05 - 2016-12-05.
- 7 Project Partner** "Implementation of socio-economic infrastructure for distributed development approach knowledge".
Funding Unesco-HP: US Dollar 45,000 on 2010-2012 and AUF 49,600 € on 2012 - 2013.
- 8 Research Project Leader** of "Wireless sensor networks for precision agriculture and food security".
Project submitted to the FIRST (Fond d'Impulsion de la Recherche Scientifique et Technique) program funding 30,000 €.

PUBLICATIONS

IEEE Xplore

DBLP

Google Scholar

Researchgate-Stat

Researchgate-Score

BOOK

- 1 O. Thiare**, "Exclusion mutuelle de groupe dans les systèmes distribués", *PhD. Thesis defended in 2007 and published in book form by Editions Universitaires Européennes ISBN: 978-613-1-50521-8, Amazon, 164 pages, May 2010.*

BOOK CHAPTERS

- 1 F.Y. Dtissibe, A.A.A. Ari, C. Titouna, **O. Thiare** and A.M. Gueroui, "Flood forecasting based on an artificial neural network scheme", *Natural Hazards, Springer Nature B.V.* 2020, 27 pages, August 2020.
- 2 E. Effah and **O. Thiare**, "Realistic Cluster-based Energy Efficient and Fault-Tolerant (RCEEFT) Routing Protocol for Wireless Sensor Networks (WSNs)", In: Arai K., Kapoor S., Bhatia R. (eds) *Advances in Information and Communication. Advances in Intelligent Systems and Computing*, vol 1129. Springer, Cham, pp. 320-337, February 2020.
- 3 M. Diop, C. Pham, and **O. Thiare**, "A 2-hop LoRa Approach based on smart and Transparent Relay-Device", *Springer Nature Switzerland AG 2019. Book Title "e-Infrastructure and e-Services for Developing Countries" LNICST 275*, pp. 24-34, February 2019.
- 4 P. Cousin, P. Malo, C. Pham, X. Yu, J. Li, J. Song, **O. Thiare**, A. Daffe, S. Kofuji, G. Marao, J. Amazonas, L. Gurgun, T. Yonezawa, T. Akiyama, M. Maggio, K. Moessner, Y. Miyake, O. Vermesan, F. Le Gall and B. Almeida, "European IoT International Cooperation in Research and Innovation", *Book Chapter in "Digitising the industry: Internet of Things Connecting the Physical, Digital and Virtual Worlds" IERC (IoT European Research Cluster) Cluster book 2016, River Publishers Series in Communications*, vol. 49, pp. 293-333, May 2016.
- 5 B. Diop, D. Diongue and **O. Thiare**, "Centralized and Distributed Scheduling Schemes for Coverage and Lifetime Maximization in Wireless Systems", *AUST International Conference in Technology (AUSTECH Abuja 2015), Book chapter in Springer*, October 2015.
- 6 **O. Thiare**, M. Naimi and A. Gueroui, "A Group Mutual Exclusion Algorithm for Mobile Ad Hoc Networks", In Book *"Innovations and Advanced Techniques in Computer and Information Sciences and Engineering"*, pp. 373-377, *Springer-Verlag*, 2006.
- 7 **O. Thiare**, M. Naimi and A. Gueroui, "Access Concurrents Sessions Based on Quorums", In Book *"Advances and Innovations in Systems, Computing Sciences and Software Engineering"*, pp. 351-356, *Springer Verlag*, 2006.

INTERNATIONAL JOURNAL PUBLICATIONS

- 1 H.-L. Razafindralambo, S.Kouhonde, K. Adeoti, M. Mounir, A. Giusti, P. Rafinetti, A. Otu, E. Effa, B. Ebenso, V.-O. Adetimirin, J.-M. Barceló, **O. Thiare** and H.-N. Rabetafika, "Applications and Action Mechanisms of Probiotic-Based Multi-Components", in *Encyclopedia*, 19 pages, September 2022.
- 2 S. Kouhonde, K. Adeoti, M. Mounir, A. Giusti, P. Rafinetti, A. Otu, A. Guisti, E. Effa, B. Ebenso, V. Adetimirin, J.-M. Barcelo, **O. Thiare**, H.-N. Rabetafika, H.-L. Razafindralambo, "Applications of Probiotic-Based Multi-components to Human, Animal and Ecosystem Health: Concepts, Methodologies, and Action Mechanisms", in *Special Issue "Shaping the Future of Probiotics: Novel Methodologies, Applications, and Mechanisms of Action" of Microorganisms (MDPI)*, 10, 1700, MDPI, 31 pages, August 2022.
- 3 B. Ebenso, A. Otu, A. Guisti, P. Cousin, V. Adetimirin, H. Razafindralambo, E. Effa, V. Gkissakis, **O. Thiare**, V. Levavasseur, S. Kouhonde, K. Adeoti, A. Rahim and M. Mounir, "Nature-based One Health approaches to urban agriculture can deliver food and nutrition security", in *Frontiers in Nutrition, section Nutrition and Sustainable Diets*, pp. 1-9, March 2022.
- 4 E. Effah, **O. Thiare** and A. Wyglinski, "A Tutorial on Agricultural Internet-of-Things: Architectures, Routing, and Optimization", *submitted to IEEE Communications Surveys & Tutorials*, December 2021.

- 5 E. Effah, **O. Thiare** and A. Wyglinski, "Real-world Implementation of a Robust and Affordable Cluster-based Agricultural Internet-of-Things Framework", *submitted to IEEE Access*, November 2021.
- 6 O.K. Ngangmo, A.A.A. Ari, A. Mohamadou, **O. Thiare** and D.T. Kolyang, "Guarantees of Differential Privacy in Cloud of Things: A Multilevel Data Publication Scheme", *International Journal of Engineering Research in Africa*, vol. 56, pp. 199-212, October 2021.
- 7 A.A.A. Ari, A.C. Djedouboum, A.N. Njoya, A.M. Gueroui, A. Mohamadou, **O. Thiare** and N. Labraoui, "Optimizing relay sensors in large-scale wireless sensor networks: A biologically inspired approach", *submitted to Computer Networks (ELSEVIER)*, July 2021.
- 8 A.A.A. Ari, H.A. Aziz, A. Moussa, **O. Thiare** and A.M. Gueroui, "A comprehensive review of data collection in IoT networks", *submitted to ISA Transactions (ELSEVIER)*, July 2021.
- 9 A.A.A. Ari, J.E.Z. Gbadoubissa, N. Labraoui, **O. Thiare** and A.M. Gueroui, "LoRa physical layer modeling for ultra narrow band communication", *submitted to Journal of King Saud University - Computer and Information Sciences (ELSEVIER)*, July 2021.
- 10 J.E.Z. Gbadoubissa, A.A.A. Ari, N. Labraoui, **O. Thiare** and A.M. Gueroui, "Spectral Efficient Direct Modulation Chirp Spread Spectrum for Ultra-Narrow Band Networks", *submitted to International Journal of Computer & Electrical Engineering (ELSEVIER)*, January 2021.
- 11 A.A.A. Ari, A.C. Djedouboum, A.M. Gueroui, **O. Thiare**, A. Mohamadou and Z. Aliouat, "A Three-Tier Architecture of Large-Scale Wireless Sensor Networks for Big Data Collection", *Applied Sciences (MDPI)*, 10(15), 5382, 21 pages, August 2020.
- 12 A.C. Djedouboum, A.A.A. Ari, A.M. Gueroui, A. Mohamadou, **O. Thiare** and Z. Aliouat, "A Framework of modeling Large-Scale Wireless Sensor Networks for Big Data collection", *Special Issue Symmetry and Complexity 2020 (MDPI)*, 12(7), 1113, 23 pages, June 2020.
- 13 A.A.A. Ari, A.C. Djedouboum, A.M. Gueroui, **O. Thiare**, A. Mohamadou and C. Titouna, "A Bio-inspired Scheme for Optimizing Relay Sensors in Large-Scale Wireless Sensor Networks", *submitted to International Journal of Engineering Science and Technology (JESTECH)*, ELSEVIER, July 2020.
- 14 A.A.A. Ari, A.M. Gueroui, C. Titouna, **O. Thiare** and Z. Aliouat, "Resource Allocation Scheme for 5G C-RAN: a Swarm Intelligence based approach", *Computer Networks (ELSEVIER)*, vol. 165 (2019) 106957, 20 pages, December 2019.
- 15 J.E.Z. Gbadoubissa, A.A.A. Ari, C. Titouna, A.M. Gueroui and **O. Thiare**, "HGC: HyperGraph based Clustering Scheme for Power aware Wireless Sensor Networks", *Future Generation Computer Systems (ELSEVIER)*, vol. 105 (2020), pp. 175-183, December 2019.
- 16 A.A.A. Ari, O.K. Ngangmo, C. Titouna, **O. Thiare**, K. Kolyang, A. Mohamadou and A.M. Gueroui, "Enabling Privacy and Security in Cloud of Things: architecture, applications, security & privacy challenges", *Applied Computing and Informatics (ELSEVIER)*, 12 pages, November 2019.
- 17 E. Effah and **O. Thiare**, "Estimation of Optimal number of Clusters : A New Approach to Minimizing Intra-Cluster Communication Cost in WSNs", *International Journal of Innovative Technology and Exploring Engineering (IJITEE)*, Scopus Journal, ISSN: 2278-3075, Volume-8 Issue-7S2, pp. 521-524, May 2019.
- 18 E. Effah and **O. Thiare**, "Survey: Faults, Fault Detection and Fault Tolerance Techniques in Wireless Sensor Networks", *International Journal of Computer Science and Information Security (IJSIS)*, vol. 16, no. 10, pp. 1-14, October 2018.
- 19 M.D. Faye, E. Caron and **O. Thiare**, "Un algorithme auto-stabilisant pour le déploiement auto-adaptatif d'un intergiciel hiérarchique : spécification, preuve, sim-

ulations", *Special issue CNRIA 2015, Arima Journal*, vol. 25, pp. 1-20, December 2016.

- 20 **A.A. El Arby and O. Thiare**, "Modeling voice over LTE", *Journal of Software Networking*, 2016 River Publishers, Vol. 2016, Issue. 1, pp. 101-112, November 2016.
- 21 **A.A. El Arby and O. Thiare**, "Voice Over LTE Performance Evaluation", *Lecture Notes in Electrical Engineering LNEE Series*, vol. 391, pp. 25-33, *Springer*, May 2016.
- 22 **B. Diop, D. Diongue and O. Thiare**, "Normalized Audio Power Sequences Technique for Detecting Grain-eating Birds in Rice Fields Based on Bird Sounds Variance", *International Journal of Multimedia and Ubiquitous Engineering (IJMUE)*, pp. 157-168, April 2016.
- 23 **B. Diop, D. Diongue and O. Thiare**, "Greedy Algorithms for Target Coverage Lifetime Management Problem in Wireless Sensor Networks", *International Journal of Control and Automation (IJCA)*, vol. 8, no. 2, pp. 232-250, February 2015.
- 24 **D. Diongue and O. Thiare**, "An Energy Efficient Self-Healing Mechanism for Long Life Wireless Sensor Networks", *Book "In Advances and Innovations in Computing, Informatics, Systems Sciences, Networking and Engineering"*, Series: *Lectures Notes in Electrical Engineering (LNEE)*, vol. 313, pp. 599-605, *Springer-Verlag*, 2015.
- 25 **D. Diongue and O. Thiare**, "A New Sentinel Approach for Energy Efficient and Hole Aware Wireless Sensor Networks", *International Journal of Computer Science and Information Security (IJCSIS)*, vol. 11, no. 9, pp. 30-37, September 2013.
- 26 **Y. Caniou, E. Caron, F. Desprez, M.D. Faye, G. Le Mahec, A. Muresan, J.R. Cornabas, O. Thiare and L. Toch**, "Description of an open-source Distributed Framework Designed for HPC in Multi-Cloud Environment", *Submitted to Journal of Grid Computing*, Under Revision, October 2013.
- 27 **O. Thiare and M. Naimi**, "A Distributed Free-Deadlock Quorum-Based Algorithm for Mutual Exclusion", *International Journal of Computer Science and Information Security (IJCSIS)*, vol. 11, no. 8, pp. 7-13, August 2013.
- 28 **O. Thiare and P.A. Fall**, "Using Maekawa's algorithm to perform distributed mutual exclusion in quorums", *Journal of Advances in Computing*, ISSN: 2163-2944, vol. 2, no. 5, pp. 54-59, September 2012.
- 29 **N.M. Ndiaye, P. Sens and O. Thiare**, "Performance Comparison of Hierarchical Checkpoint Protocols Grid Computing", *IEEE/DCAI2012, Extended paper selected as one of the best papers to Special issue of DCAI on International Journal of Interactive Multimedia and Artificial Intelligence (IJIMAI)*, vol. 1, no. 5, pp. 46-53, June 2012.
- 30 **O. Thiare and M. Naimi**, "A Weight-Throwing Group Mutual Exclusion Algorithm for Mobiles Ad Hoc Networks", *International Journal of Digital Content Technology and its Applications (JDCTA)*, ISSN : 1975-9339, vol. 5, no. 4, pp. 254-263, April 2011.
- 31 **O. Thiare**, "Several Tokens Distributed Mutual Exclusion Algorithm in a Logical Ring Network", *ICMLC 2009, extended version selected for publication In International Proceedings for Computer Science and Information Technology*, vol. 3, pp. 567-572, 2011.
- 32 **O. Thiare**, "Group Mutual Exclusion in distributed systems", *PhD Thesis defended on 2007, Published in European Academic Publishing*, ISBN: 978-613-1-50521-8, May 2010.
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- 2 **Ousmane Dieng**, "Low-Cost Localization Methods with LPWAN IoT to Prevent Cattle Rustling in Africa", *Gaston Berger University of Saint-Louis - Senegal*. Ph.D. Thesis funded by WAZIUP Project, defended on January 19 2021 at Gaston Berger University of Saint-Louis - Senegal.
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- 6 **El Hadji Serigne Mamour Diop**, "Optimization of image transmission in wireless sensor networks for critical monitoring applications", with Prof. Congduc Pham *University of Pau - France*. Ph.D. Thesis defended on June 17 2014 at University of Pau and the Adour region - France.
- 7 **Dame Diongue**, "Lifetime centralized and distributed optimization of wireless sensor networks", *Gaston Berger University of Saint-Louis - Senegal*. Ph.D. Thesis defended on June 13 2014 at Gaston Berger University of Saint-Louis Senegal
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- 6 **Ignace Djitog**, "A Model Driven Engineering Framework for Healthcare Systems Management", *African University of Science and Technology (AUST) - Abuja-Nigeria, 2017.*
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- 8 **Ibrahima Gaye**, "Social networks analysis : Contribution of detection of the seeds for maximizing the influence spread", *Ecole Supérieure Polytechnique (ESP) - UCAD, 2017.*
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- 2 **Ya Jabou Sanyang**, "Comprehensive E-Healthcare System for Edward Francis Small Teaching Hospital (EFSTH)", *Department of Computer science, University of the Gambia (UTG).* February 2018.
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- 10 Asulba Barikisu Ahmed, "Group Mutual Exclusion in Opportunistic network", *Department of Computer science, African University of Science and Technology (AUST) Abuja-Nigeria*. 2015-2016.
- 11 Adebajo Fisayomi Yetunde, "Detection of Denial service Attack in Wireless sensor networks", *Department of Computer science, African University of Science and Technology (AUST) Abuja-Nigeria*. With Dr. Dame Diongue. 2013-2014.
- 12 Ousmane Dieng, "Detection of denial service in Wireless sensor networks", *Department of Computer science, UFR SAT, Gaston Berger University of Saint-Louis*. With Dr. Dame Diongue. 2013-2014.
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- 17 Rougui Ly, "Analysis and design of software for performance management of human resources", *Department of Computer science, UFR SAT, Gaston Berger University of Saint-Louis*. 2012-2013.
- 18 Abdou Kane Diagne and Serigne Fall, "A Platform processing XML Documents", *Department of Computer science, UFR SAT, Gaston Berger University of Saint-Louis*. 2012-2013.
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- 22 Alimatou Dieye, "Design of a tool for decision support for receipts Senelec", *Department of Computer science, UFR SAT, Gaston Berger University of Saint-Louis*, 2011-2012.
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- 24 Papa Cheikh Cisse, "Lifetime optimization on wireless sensor networks management", *Department of Computer science, UFR SAT, Gaston Berger University of Saint-Louis*, 2010-2011.
- 25 Dame Diongue, "Management and QoS in mesh networks 802.11s", *Cheikh Anta Diop University of Dakar*, 2009-2010.
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- 28 Ahmed Wade, "Sensor-actuator networks: architecture and performance", *Department of Computer science, UFR SAT, Gaston Berger University of Saint-Louis*, 2009-2010.

DOCTORAL STUDIES

Ph.D. IN COMPUTER SCIENCE

DISSERTATION TITLE: GROUP MUTUAL EXCLUSION IN DISTRIBUTED SYSTEMS

ABSTRACT:

Group mutual exclusion is an interesting generalization of the mutual exclusion problem. This problem was introduced by Joung, and some algorithms for the problem have been proposed by incorporating mutual exclusion algorithms. Group mutual exclusion occurs naturally in a situation where a resource can be shared by processes of the same group, but not by processes of different groups. It is also called the "congenial talking philosophers problem". An example of application interesting is a CD jukebox (documentation, films...) on Internet : several users wishing to reach same CD will be able to do it at the same time instead of awaiting the end of the request of the other users.

Effective solutions, written in the message passing model and based on the quorums on the one hand and the circulation of token on the other hand are presented in this thesis. We tackle also the problem of the mutual exclusion of group on the ad hoc mobile networks and we have proposed an algorithm which is sensitive to link formation and link breaking and thus which is suitable for ad hoc mobile networks.

Keywords: Mutual exclusion, Group mutual exclusion, Quorum, Ad Hoc Networks.

Defended on June 25th, 2007 to Paris in front of the following committee:

First and last name	Title	University	Role
Christian LAVALT	Professor	University of Paris 13	Chairman
Jean Frederic MYOUPPO	Professor	University of Amiens Picardie Jules Verne	Referee
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Laurent AMANTON	Professor	University of Le Havre	Inspector

THESIS MASTER II COMPUTER SCIENCE: Databases

Dissertation Title: Association rules, under the supervision of Professor Arnaud Giacometti

THESIS MASTER II NUMERICAL ANALYSIS: Partial Differential Equations (PDE)

Dissertation Title: Exact Controllability of viscoelastic bodies, under the supervision of Professor Abdou Sene

MEMORY MASTER I APPLIED MATHEMATICS: Numerical analysis

Project Title: Grid of polygonal field of \mathbb{R}^2 , under the supervision of Professor Samuel Ouya

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<http://www.ijric.org/>
- **AISS** Advances in Information Sciences and Service Sciences.
<http://www.aicit.org/aiss>
- **JCIT** Journal of Convergence Information Technology.
<http://www.aicit.org/jcit/>
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- The 2nd International Conference on Digital Contents and Applications **DCA 2013**.
- The International Conference on Parallel and Distributed Processing Techniques and Applications **PDPTA 2013... 2011**.
- The Multi Conference on Computer Science and Information Systems **IADIS/MCCSIS 2011**.
- IEEE Conference on Open Systems **IEEE ICOS 2010**.
- High Performance Computing and Simulation **HPCS 2010**.
- IEEE International Conference on Integrated Intelligent Computing **IEEE ICIIC2011/2010**.
- IEEE International Conference on New Trends in Information Science and Service Science **IEEE NISS2011/2010**.
- IEEE International Conference on Networked Computing **IEEE NCM2011/2010**.
- IEEE International Conference on Digital Content, Multimedia Technology and its Applications **IEEE IDC2011/2010**.
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- International Conference on Computer and Information Science **IEEE ICIS2011/2010**.
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- IEEE Wireless Communications and Networking Conference **IEEE WCNC 2009**.
- IEEE International Conference on the Applications of Digital Information and Web Technologies **IEEE ICADIWT 2009**.

PROFESSIONAL ACTIVITIES

- **African Centers of Excellence Workshop (ACE I & ACE IMPACT)**
World Bank & AAU
Abuja (Nigeria)
February, 23-29 2020
- **Invitation Prospective workshop for a partnership with the Mastercard Foundation Scholarship Program**
 - Marriott Kigali
 - Kigali (Rwanda). November, 25-28 2019

- **Invitation for the 3rd Network of Universities of NorthWest Africa and Macaronesia (UNWAM)**
 - University of Nouakchott Al-Aasriya
 - Nouakchott (Mauritania). November, 20-23 2019
- **Invitation for the 10th International Circular Economy Week & Conference**
 - IfaS (Institute fur angewandtes Stoffstrommanagement)
 - Birkenfeld (Germany). October, 20-25 2019
- **Signing Ceremony: Partnership Agreements between PASET-RSIF African Host Universities and ICIPE (Kenya), the RSIF Regional Coordination Unit**
 - World Bank
 - Nairobi (Kenya). October, 4-10 2019
- **African Centers of Excellence Workshop (ACE IMPACT)**
 - World Bank & AAU
 - Dakar (Senegal). September, 23-27 2019
- **African Centers of Excellence Workshop (ACE I)**
World Bank & AAU
Ouagadougou (Burkina Faso)
May, 7-9 2018
- **Invited Talk to the Workshop "Agriculture numrique en Afrique"**
Title of my Talk : Transformation of agriculture in Africa through IoT and Big data
INRIA/CIRAD (Montpellier)
April, 3-4 2018
- **Joint ACE I & ACE II Projects Workshop**
World Bank & AAU
Accra (Ghana)
November, 7-9 2017
- **KIST-PASET Partnership Workshop**
KIST (Korea Institute of Science and Technology)
Seoul (South Korea)
September, 6-12 2017
- **International meeting**
Agreenium
AgroParistech, Paris (France)
May, 30 2017
- **African Centers of Excellence Workshop**
World Bank & AAU
Lagos (Nigeria)
May, 16-18 2017
- **Official Review of the WAZIUP Project first year**
European Union
Brussels (Belgium)
April, 10-11 2017
- **Visiting researcher**
LIUPPA Lab.
University of Pau France
April, 03-09 2017
- **Participation Workshop: Capacity building on syllabus development and production**
University of Sine-Saloum El Hadji Ibrahim Niass (USSEIN) Senegal
Kaolack - Senegal
March, 13-17 2017
- **Participation Workshop: Competency approach**
University of Sine-Saloum El Hadji Ibrahim Niass (USSEIN) Senegal
UCAD - Senegal
February, 08-12 2016

- **Full Professor in Computing science**
Gaston Berger University of Saint-Louis Senegal Jul. 2015-Present.
 - Implementation of research projects;
 - Organization of seminars and conferences;
 - Supervision of Ph.D. Thesis and Master Thesis;
 - Teaching in different modules.
- **Director of the IT Computing Center**
Gaston Berger University of Saint-Louis Senegal Nov 2013-Nov 2016.
 - Definition and Implementation of the IT policy of the University;
 - Establishment of partnerships;
 - Implementation of IT projects;
 - Research funding;
 - Project Manager for the implementation of GIS at the University;
 - Management of the IT team.
- **Associate Professor in Computing science**
Gaston Berger University of Saint-Louis Senegal 2010-2015.
 - Implementation of research projects;
 - Organization of seminars and conferences;
 - Supervision of Ph.D. Thesis and Master Thesis;
 - Teaching in different modules.
- **Member of the Scientific and Pedagogical Council of the Doctoral School Sciences and Technologies**
Gaston Berger University of Saint-Louis Senegal 2014-2017.
 - Allocate research grants in the various disciplines;
 - Proposing and selecting candidates for different prizes;
 - Validate and monitor the various teaching modules;
 - Setting up monitoring thesis.
- **Coordinator of the M. Sc in Computer Science**
Gaston Berger University of Saint-Louis Senegal Oct. 2011-Oct. 2013.
 - Establish schedules and organizes educational distribution;
 - Oversee updates, room management in connection with the secretariat;
 - Oversee the monitoring of absences;
 - Organize diploma award juries.
- **Head of the Computer Science department.**
Gaston Berger University Saint-Louis - Senegal. 2007-2009
 - Ensure the organization and operation of education provided;
 - Work with education officials;
 - Supervise knowledge assessments;
 - Organize diploma award juries.
- **"Benchmarking mission to Canada on services dedicated to the national grid for Education and Research in Senegal"**
PGF-SUP Ministry of Higher Education and Research UQAM Montreal. December 05-15 2014
- **"Assessor member of the selection of proposed projects funding by FIRST (Fond d'Impulsion pour la Recherche Scientifique et Technique)"**
Ministry of Higher Education and Research Senegal. February 2014

- **1st "African Ministerial Forum on ICT integration in Education and Training"**
Hotel Ramada Plaza Tunis. December, 9-11 2013
- **Panelist of the Workshop "Doctoral Education and E-supervision"**
University Oberta of Catalunya Barcelona - Spain. 2013
 - Present and discuss the importance and pertinence of e-supervision and the academic challenges and opportunities involved;
 - Analyse the use of Personal Learning Environments for Doctoral Students (PLEDS) as new models of effective e-supervision;
 - Share concrete experiences and practice in the field of e-supervision: how does it work; what are the basic principles that should guide e-supervision; what are the challenges (advantages and opportunities or difficulties);
 - Identify the institutional actors to involve (programme designers, professors, students and administrators);
 - Debate challenges and possible solutions to develop successful e-supervision.
- **Workshop Project "HP-UNESCO Brain Gain Initiative"**
CSIR Meraka Institute Pretoria - South Africa. 2011
 - Site Administration and Deployment;
 - Basic User Training;
 - Grid Portals and Application Gateways;
 - Registration Authority assignment;
 - Application and cloud computing development.
- **3rd "Euro-Africa Cooperation Forum on ICT Research"**
VTT Finland Helsinki - Finland. 2010
- **"HP-UNESCO Project to contain Brain Gain in Africa"**
University of Johannesburg Johannesburg - South Africa. 2009
 - Configuring Proliant Server and Array Hardware;
 - Installing Operating System and Server Support Hardware;
 - Storage Solutions for Proliant Server;
 - Troubleshooting Proliant Motherboards;
 - Grid Computing.
- **Postdoc Research 10 month, PRISM Lab.**
University of Versailles St Quentin en Yvelines Paris. September 2009-May 2010
- **Certificate of the Institute of Mathematical Sciences.**
University Kuame Nkrumah Accra - Ghana. 2003
- **Assistant engineer, Department of Computer Science.**
University François Rabelais Tours - France. 2001-2002
- **Free-Lance Assistant teacher, Department of Applied Mathematics.**
Gaston Berger University Saint-Louis - Senegal. 2000-2001
- **Treasurer Mathematical Society of Senegal.**
University Cheikh Anta Diop Dakar - Senegal. 2000-2001

TEACHING

- 1 **Emerging technologies**, Master II Computer Science, Department of Computer science, Faculty of Applied Science and Technology, Gaston Berger University of Saint-Louis Senegal
- 2 **Wireless and Distributed Systems**, Master II Computer Science, African University of Science and Technology, Abuja Campus Nigeria

- 3 **Distributed Algorithmic**, Master I Computer Science, Department of Computer science, Faculty of Applied Science and Technology, Gaston Berger University of Saint-Louis Senegal
- 4 **Concurrent and Parallel Programming**, Master II Computer Science, Department of Computer science, Faculty of Applied Science and Technology, Gaston Berger University of Saint-Louis Senegal
- 5 **Distributed Algorithmic**, Master II Computer Science, Department of Computer science, Faculty of Applied Science and Technology, Gaston Berger University of Saint-Louis Senegal
- 6 **Graph Theory**, Master II Master II Computer Science, Department of Computer science, Faculty of Applied Science and Technology, Gaston Berger University of Saint-Louis Senegal
- 7 **Distributed Systems**, Master II Computer Science, Department of Computer science, Faculty of Applied Science and Technology, Gaston Berger University of Saint-Louis Senegal
- 8 **Distributed applications** , MADS I Computer Science, Department of Computer science, Faculty of Applied Science and Technology, Gaston Berger University of Saint-Louis Senegal
- 9 **Mathematics for Computer science**, Bachelor Computer Science, Department of Computer science, Faculty of Applied Science and Technology, Gaston Berger University of Saint-Louis Senegal
- 10 **Computing engineering**, Bachelor Computer Science, Department of Computer science, Faculty of Applied Science and Technology, Gaston Berger University of Saint-Louis Senegal
- 11 **Numerical Methods for PDE**, Master I Applied Mathematics, Department of Computer science, Faculty of Applied Science and Technology, Gaston Berger University of Saint-Louis Senegal
- 12 **Data Analysis**, Bachelor in Computer Science and MAIF, Department of Computer science, Faculty of Applied Science and Technology, Gaston Berger University of Saint-Louis Senegal
- 13 **Operational research**, Bachelor in Computer Science and MAIF, Department of Computer science, Faculty of Applied Science and Technology, Gaston Berger University of Saint-Louis Senegal
- 14 **Algorithmic I**, Associates Degrees (DEUG I) MAI-MPI-MASS, LPG I, Department of Computer science, Faculty of Applied Science and Technology, Gaston Berger University of Saint-Louis Senegal
- 15 **Algorithmic II**, Associates Degrees (DEUG II) MAI-MPI-MASS, Department of Computer science, Faculty of Applied Science and Technology, Gaston Berger University of Saint-Louis Senegal
- 16 **Language C**, Associates Degrees (DEUG II) MAI-MPI-MASS, Department of Computer science, Faculty of Applied Science and Technology, Gaston Berger University of Saint-Louis Senegal
- 17 **Computer Science**, Master I Economics, University Cheikh Anta Diop of Dakar Senegal
- 18 **Analysis**, Associates Degrees (DEUG I and II) Economics, University Cheikh Anta Diop of Dakar Senegal

The table below shows all of my teaching activities.

Course	Public	Type of education
Emerging technologies	MSc.	Lecture, Practical work
Distributed systems	MSc.	Lecture
Distributed algorithmic	MSc.	Lecture
Concurrent and Parallel Programming	MSc.	Lecture
Distributed and Wireless systems	MSc.	Lecture
Distributed algorithmic	MSc.	Lecture
Graph theory	MSc.	Lecture
Distributed applications	MSc.	Lecture, Tutorial, Practical work
Data Analysis	BSc.	Lecture, Tutorial, Practical work
Mathematics for Computer science	BSc.	Lecture, Tutorial
Computing engineering	BSc.	Lecture, Tutorial, Practical work
Language C	BSc.	Tutorial, Practical work
Algorithmic	BSc.	Lecture, Tutorial, Practical work
Algorithmic 2	BSc.	Tutorial, Practical work

PROGRAMMING LANGUAGES, OPERATIONAL SYSTEMS, SOFTWARES

- **LANGUAGES**

- Python, Java, Spin, C/C++, Pascal, Fortran, SPSS, NS2, L^AT_EX, R, Omnet++

- **PACKAGES**

- Castalia, MATLAB, Maple, Scilab

- **SYSTEMS**

- Windows XP/Seven/Server 2008, Linux (Debian)

- **NETWORKS**

- LAN, WLAN, IP Protocol, WSN

- **WORD PROCESSING**

- Word, Excel, Open Office, Xfig

CENTER OF INTERESTS

- Literature, New technologies, Sport, Video games