

# Loïc SALMON

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New-Caledonia University

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## Education

- November 2013- January 2019 **PhD in computer science : "Management and processing of real-time streams and historical spatio-temporal data : Application to the analysis of maritime traffic"**, *Naval Academy Research Institute, Brest, France.*
- 2010-2013 **Engineering School Diploma in computer science**, *Ecole Internationale des Sciences du Traitement de l'Information (EISTI) Cergy-Pontoise.*

## Teaching Activities

- 2021-2022 **Teaching at Isen Yncrea Ouest, 300 hours.**  
— Oriented Object Programming(C++) — Algorithmic and computing programming (c)  
— Database systems — Introduction to Big Data systems
- 2020-2021 **Teaching at French Naval Academy, 192 hours.**  
— Oriented Object Programming(Java) — Algorithmic/computing programming (c++)  
— Spatial Analysis — Computer architecture and systems

### Supervising student MSc projects

- Multi agents simulation approach for plastic patches collection at sea using Netlogo
- Multi agents simulation for COVID propagation's modelling on board of ships using Netlogo

- 2013-2018 **Teaching at French Naval Academy, 120 hours a year.**

- Computing programming (c++) — Database systems
- Simulation and multi agent systems — Network and security
- Geo-localization

### Supervising student MSc projects

- Detecting ships in illegal fishing conditions with positioning vessel data (AIS)
- Vessels trajectory analysis with Spatial DBMS for traffic monitoring

### Supervising interns

- MSc student on Identification of false AIS positions and risk analysis
- BSc student on Development of techniques for visualization of underwater drones movements

## Research activities and Work experience

### Research Domain interest

- Spatio-temporal Big Data — Mobility Data Management
- Real-time processing — Distributed databases
- Simulation — Software Engineering
- Multi-agent systems — Marine pollution

### Research Experiences

- 2021-2022 **Lecturer**, *Isen Yncrea Ouest.*
- 2020-2021 **Teaching and Research Assistant**, *French navy school research institute.*
- 2019-2020 **Postdoctoral researcher**, *Software Engineering for the conception of a trajectory simulator for underwater drones*, University of Western Brittany.

November 2013-  
January 2019 **PhD in computer science : "Management and processing of real-time streams and historical spatio-temporal data : Application to the analysis of maritime traffic"**, *French navy school research institute*.

2012-2013 **Internship**, *Study of diversification processes for the multi-objective swarm optimisation algorithm*, French Alternative Energies and Atomic Energy Commission.

2011-2012 **Internship**, *Parallelisation of datamining algorithms using Hadoop*, EISTI's laboratory (School in Computer Science and Mathematics Engineering laboratory).

#### [Research vacancies and involvement on research projects](#)

2020-2021 **H2020 ISOLA project**, *Study of cyber threats and risks at sea*, French naval academy research institute.

2019-2020 **Navidro project funded by SHOM and DGA**, *Software Engineering for the conception of a trajectory simulator for underwater drones*, University of Western Brittany.

2016-2018 **H2020 DataCron project** , *French naval academy research institute*.

February 2016-April 2016 **Visiting graduate researcher**, *Yannis Theodoridis*, University of Piraeus, Development of methods for hybrid processing of vessel position data to identify uncovered areas at sea.

2014-2017 **French ANR DeAIS**, *Detection of fake AIS messages*, French naval academy research institute.

#### [Communications and publications](#)

Submitted papers waiting for acceptance

**Salmon, L., Pillain, PY, Guillou, G., Babau, JP.**, *"NAVIDRO, a CARES architectural style for configuring drone simulation"* , Transactions on Embedded Computing Systems.

Journal papers

April 2017 **Salmon, L., Ray, C.**, *"Design principles of a stream-based framework for mobility analysis"* , Geoinformatica Volume 21, Number 2, 25 pages, Special issue on Geostreaming.

Conference papers

**Salmon, L., Pillain, PY, Guillou, G., Babau, JP.**, *"CARES, a framework for CPS simulation : application to autonomous underwater vehicle navigation function"* , 2021 Forum on specification and Design Languages (FDL).

September 2021 **Salmon L P, Merino P, Claramunt C, Follut D, N Pelissero** , *"Data fusion challenges for AIS anti-piracy measures"* , IEEE Oceans 2021.

August 2021 **Merino P, Salmon L, Bozhilova M, Ivanov I, Stoianov N, Velev G, Claramunt C, Yanakiev Y** , *"ISOLA : an innovative approach to cyber threat detection in cruise shipping"*, Micrads 2021 : Multidisciplinary International Conference of Research Applied to Defense and Security.

May 2021 **Salmon L, Maslov N, Claramunt C**, *"Processus de modélisation et optimisation pour la collecte de déchets plastiques en mer"*, SAGEO 2021 (Spatial Analysis and GEomatics).

November 2020 **Maslov, N., Salmon, L. , Claramunt, C.**, *"Towards a modelling and optimisation of marine floating plastic debris recovery"* , W2GIS 18th International Symposium on Web and Wireless Geographical Information Systems.

March 2017, Venice, Italy **Claramunt, C. Ray, C, Camossi, E., Jouselme, A. Hadzagic, M. Andrienko, G. Andrienko, N. Theodoridis, Y. Vouros, G. Salmon, L.**, *"Maritime data integration and analysis : recent progress and research challenges"* , EDBT : 20th International Conference on Extending Database Technology.

October 2014, Grenoble France **Salmon, L.** , *"Une approche holistique combinant flux temps-réel et données archivées pour la gestion et le traitement d'objets mobiles"* , Session jeunes chercheurs, 2 pages, Base de données avancées 30e édition.

Workshop papers

- November 2016, San Francisco **Salmon, L., Ray, C., Claramunt, C.** , “*Continuous detection of black holes for moving objects at sea*” , 7th ACM Sigspatial International Workshop on Geostreaming (IWGS), 10 pages, 24th ACM SIGSPATIAL International Conference on advances in Geographic Information Systems.
- November 2015, Seattle **Salmon, L., Ray, C., Claramunt, C.** , “*A hybrid approach combining real-time and archived data for mobility analysis*” , 6th ACM Sigspatial International Workshop on Geostreaming (IWGS), 6 pages, 23rd ACM SIGSPATIAL International Conference on advances in Geographic Information Systems.
- November 2015, Seattle **Salmon, L.** , “*A holistic approach combining real-time and historical data for maritime traffic monitoring*” , ACM SIGSATIAL 2015 PhD Symposium, 4 pages, 23rd ACM SIGSPATIAL International Conference on advances in Geographic Information Systems.
- July 2014, Orléans France **Salmon, L., Ray, C., Claramunt, C.** , “*Gestion et traitement simultané de flux temps-réel et archivés de données spatio-temporelles : Application à l’analyse du trafic maritime*” , Atelier Big Spatial Data, 6 pages, Colloque international Géomatique, une vision prospective des territoires.