

Henrick Deschamps

Ph.D. - Eng. in Computer Science and Network · Critical Distributed Systems Specialist

18 rue de Bayard, Toulouse, FRANCE

☎ +33(0)664199494 | ✉ contact@hnrck.io | 🏠 www.hnrck.io | 📷 [hnrck](#) | 🌐 [henrick-deschamps](#)



Seeking a challenging, responsible position as a distributed systems engineer in an agile structure with the objective of becoming an industrial expert.

Summary

I am a French computer science and network Ph.D. and engineer, and I am Interested in real-time distributed systems.

Distributed systems are nowadays inevitable in the field of engineering, no system lives alone isolated from its environment, even among systems that were historically considered monolithic, which raises questions about resource sharing, reliability, and data partitioning.

I am looking for serious technological challenges. I would like to contribute to the conception and implementation of complex systems in a team, and to participate in the demonstration of these systems.

Skills

Programming	C/C++, Python, Java, Haskell, Bash, Ada, LaTeX
Office softwares	Word processor, spreadsheet, database, scientific writing
Software design	UML, SysML, AADL, static code analysis, code instrumentation
Devops	Versioning, virtualization, test automation, continuous integration
Frameworks and libraries	STL, HLA (CERTI), MQTT, MPI, OpenMP, POSIX, Linux kernel, Qt5, nl, Kafka, elk
Tools	CMake, Make, formatters, linters, debuggers, valgrind, wireshark, TCP tools, coverage, afl
Languages	French, English, Chinese, learning Korean

Work Experience

Thales Group, Big Computing Competence Center, IVV team

Toulouse, France

Integration and Validation Engineer

Sep. 2019 - now

- Contribution to the analysis and validation of the implementation of a big data system.
- Identification of problems within a defined perimeter and reporting.
- Responsibility for the design and development of inspection tools.
- Supervision of a junior associate for the implementation of inspection tools.

Airbus, Aircraft simulation department

Toulouse, France

Software Engineer for simulation architecture, Ph.D. Candidate

Mar. 2016 - Mar. 2019

- Formalization of the execution of a distributed simulation for the a priori validation of a simulation scheduling respecting aerospace-specific constraints.
- Analysis of simulation packages and frameworks for formalizing the logical components and the distributed execution architecture.
- Implementation of RROSACE – a simple flight controller case study from ROSACE, in Matlab and C.
- Implementation of sEaplanes – a simulation framework in C++ based on HLA, a publish-subscribe-based data exchange standard, with Qt interface.
- Implementation of a modulable and extensible allocation tool in Python, with multiple heuristics.

ISAE-Supaero (Superior Institute of Aeronautics and Space)

Toulouse, France

ATER (Temporary Teaching and Research Assistant), Ph.D. candidate

Mar. 2016 - Jul. 2019

- Teaching assistant in C, Java, Real-time systems, SysML, and numerical analysis.

Viveris Technologies

Toulouse, France

Software Engineer consultant for satellite ground segment communications

Dec. 2014 - Feb. 2016

- Implementation of a DVB-RCS2 communication protocol in satellite communications ground segment for Thalès Alenia Space.
- Development and integration of network modules in multi-threaded telecommunication kernel device. Open-source library available at [hnrck/librle](https://github.com/hnrck/librle).
- Development of Quality of Service library for the satellite simulation environment, based on the libs.
- Development of test tools for continuous integration in Python, Ruby and Perl.
- Analysis of network packet scheduling for QoS validation.

Airbus Group Innovations

Toulouse, France

Software Engineer Final year project

Feb. 2014 - Aug. 2016

- Internship in the modeling of avionic ethernet network QoS for validation of the quality of service rules.
- OmNet++/OmNest development of network scheduler models (C++ and NED languages).
- Minor bugs found in the OmNet++/OmNest inet library, one correction proposed and merged in the original library: inet-framework/inet/pull/18.
- Implementation of analysis tools in Python and Excel macro.

LAAS (Laboratory for Analysis and Architecture of Systems)

Toulouse, France

Software Engineer 4th year internship

Jun. 2013 - Aug. 2013

- M2M energy efficient communication. Software defined radios for wireless sensors network, with consideration for home automation and avionics applications.
- Manipulation of SDRs (Etus B 100/Etus N 100) and SDR software (GNURadio, Minicom, Iris, and LabView).
- Development of physical and mac layers for sensors network.

Education

ISAE-Supaero (Superior Institute of Aeronautics and Space)

Toulouse, France

Industrial Ph.D. in Networks, Telecoms, Systems and Architecture

2016 - 2019

- Ph.D. thesis entitled Scheduling of a cyber-physical system simulation.
- Supervised by Prs. Pierre Siron and Janette Cardoso.
- Co-supervised by Airbus through a CIFRE (Industrial Agreement of Training through Research).

INSA (National Institute of Applied Sciences)

Toulouse, France

Engineering Degree in Computer Science and Communication Networks

2009 - 2014

- Engineering school part of French Group A, delivering engineering degrees (master's level, 5 years of study), recognized by the French Engineering Title Conferment Commission, with international equivalence
- Computer Science, Modelling and Communication background.
- Specialization in Computer Science and Telecommunication Networks.
- Major in Communicative Distributed Systems, minor in IT Security.
- Student Clubs President and Secretary.

UQO (Quebec University in Ottawa)

Ottawa, Canada

Exchange student, Master in Computer Engineering, Telecommunication Networks and IT security

2013

- Exchange semester administered by the CREPUQ (Conference of Rectors and Principals of Québec Universities).
- GPA 4.3 / 4.3, A+ grade

Jules Renard Highschool

Nevers, France

French scientific Baccalaureat

2008

- With honours.

Honors & Awards

Domestic

2014 **High-performing intern**, Airbus Group Innovations

Toulouse, France

Publications

Implementation of a Cyber-Physical System simulation components allocation tool

Ghent, Belgium

32nd European Simulation and Modelling Conf. - ESM'2018

Oct. 2018

Coincidence Problem in CPS Simulations: the R-ROSACE Case Study

Toulouse, France

Proceedings of the 9th European Congress Embedded Real Time Software and Systems ERTS² 2018

Jan. 2018

Distributing Cyber-Physical Systems Simulation: The Satellite Constellation Case

Toulouse, France

5th Federated and Fractionated Satellite Systems Workshop

Nov. 2017

Toward a formalism to study the scheduling of cyber-physical systems simulations

Rome, Italy

2017 IEEE/ACM 21st International Symposium on Distributed Simulation and Real Time Applications (DS-RT)

Oct. 2017