

# Benjamin Cathelineau

EMBEDDED SOFTWARE ENGINEER WITH 2 YEARS OF EXPERIENCE

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## Skills

<b>Programming/Compilation</b>	C, C++, GCC, GDB, Make, Python, Java
<b>Tools</b>	IBM suite (Rational Rhapsody, EWM), Git, vim, VMWare WorkStation, VirtualBox
<b>Systems</b>	Embedded Linux (including device drivers), VxWorks
<b>Modeling/Simulation</b>	Simulink, SystemC-TLM/AMS, QEMU, Physical Modeling (Differential Equations)
<b>Computer Networks</b>	Cisco CCNA 1 and 2 (Ethernet, TCP/IP network expert), Wireshark, NTP
<b>Languages</b>	French (Native language), Fluent English (TOEIC 970, TOEFL 104)

## Experience

### SII, working at MBDA

Le Plessis-Robinson, France

EMBEDDED SOFTWARE ENGINEER

February 2024 - Present

- Project : Multiple embedded softwares in **C++** and **Java**, using **IBM Rational Rhapsody** for code generation
  - These softwares interact through a **Ethernet** network and through a **1553** bus
- Software Engineering department** : Member of a team of about 4 developers, with my main responsibilities being :
  - C++**, **Java** : Conception and Development of new features, rework of existing features from legacy code, resolution of existing bugs
  - Integration testing of the software on **testing benches** : using testing means (proprietary simulators) to test the system
  - Custom **Embedded Linux** generation
  - Finding and compiling updated **device drivers** (as kernel modules) for new linux kernel versions
  - Porting non updated **device drivers** to new linux kernel versions (drivers written in **C**)
  - Porting the source code to a new compiler (**gcc**) version : resolving of ensuing compilation problems due to **C++** standard changes
- Work carried out autonomously and at my initiative, to **improve the workflow and quality of the project deliverable** :
  - Development of very robust scripts for the **NTP** time synchronization
  - Strengthening the network (**TCP/IP**) configuration of the system
  - Using scripting languages : **Python**, **PowerShell**, **bash** and **Makefile** for the automation of tests, compilation and documentation
  - Automation of **IBM Rational Rhapsody** through the **Java** API
  - Automation of **Wireshark** through the **tshark** command-line interface
  - Writing a **C** code generator in Python for decoding network payloads into **C** structs. **C++** : Generating random unit tests for the generated code

### TIMA Laboratory

Grenoble, France

EMBEDDED SOFTWARE AND SIMULATION ENGINEER (PHD CONTRACT)

October 2022 - January 2024

- Control system environment Modeling and simulation :
  - Discrete time modeling with recurrence relation
  - Continuous time modeling with differential equation
  - Comparative evaluation of Cyber-Physical Systems simulation in **Simulink** and **SystemC**
- Software Engineering / Developpment :
  - Simulink/MATLAB** models (including custom blocks using **S-Function** in **C**)
  - SystemC (C++)** (AMS/TLM) SoC (**System-On-Chip**) models
  - Restoration and rework of legacy **C++** code, rework of legacy **Makefiles**

### Université Grenoble Alpes, DLST

Grenoble, France

TEACHER

January 2023 - May 2023

- System and Programming Environment course for first-year university student : Labs and in-class exercices
- Bash** scripts, **C** programming basics and simple finite state machine modeling

### TIMA Laboratory

Grenoble, France

MASTER 2 INTERN

February 2022 - June 2022

- Parallel simulation of Cyber-Physical/Embedded System models in **SystemC (C++)**
- Restauration and rework of legacy **SystemC (C++)** code, rework of legacy **Makefiles**

### Kayentis

Meylan, France

ENGINEER ASSISTANT INTERN

May 2021 - September 2021

- Automatic Response System **PowerShell** script
- Web Browser automation with **Python Selenium** for probing a Web Application
- Jenkins** for automatically monitoring the Web Application

## Givaudan

INTERN

- Research and deployment of an **Ethernet network** monitoring solution ( Advanced Host Monitor )
- *PowerShell* scripting for automation

Vernier, Switzerland

April 2019 - July 2019

## Abissa Informatique Genève

INTERN

- Research and deployment of an IPAM (IP address management) solution (Phlpam)

Genève, Switzerland

July 2018 - August 2018

## Education

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### Grenoble INP - Ensimag and Université Grenoble Alpes

MASTER OF SCIENCE IN INFORMATICS AT GRENOBLE - DISTRIBUTED COMPUTING: FROM CLOUD TO EDGE COMPUTING,  
EMBEDDED SYSTEMS AND NETWORKING

- Obtained a PhD scholarship based on academic achievements

Grenoble, France

October 2021 - June 2022

### Grenoble INP - Ensimag

ENGINEERING DEGREE - INFORMATION SYSTEMS ENGINEERING

Grenoble, France

September 2020 - June 2022

### Université Savoie Mont Blanc, exchange with Montana State University

BACHELOR - COMPUTER NETWORKS AND TELECOMMUNICATIONS

Bozeman, Montana, USA

August 2019 - May 2020

### IUT Annecy - Université Savoie Mont Blanc

UNIVERSITY DIPLOMA OF TECHNOLOGY - NETWORKS AND TELECOMMUNICATIONS

Annecy, France

September 2017 - June 2019