Steven **Varoumas**

Software Engineer - PhD Graduate in Computer Science

About me

I graduated with a PhD in computer science from Sorbonne University, in Paris, France.
My main domains of expertise are embedded systems, programming languages and compilers.
French is my native language and I am fully proficient in English.
I am a fast learner, passionate about problem solving and software development.

Areas of specialisation

- Functional Programming
- Compilers / Virtual Machines
- Embedded Software

Spoken languages

- **French**: Fluent (mother tongue)
- **English**: Full proficiency
- **Spanish**: Limited

Tools & programming languages

OCaml
C & C++
git
LaTeX
Java
LLVM
Python
Haskell

stevenvar.github.io

github.com/stevenvar

Degrees

2019 **Ph.D in Computer Science** · Sorbonne University (Paris, Fr)
"High-level programming models for microcontrollers with scarce resources"
supervised by T. Crolard (Cnam), P. Trébuchet (ANSSI) and E. Chailloux (LIP6)

2015 **M.Sc in Computer Science** · Pierre and Marie Curie University (Paris, Fr)
Science and Technology of Software - magna cum laude distinction

2012 **B.Sc in Computer Science** · Pierre and Marie Curie University (Paris, Fr)
Programming and Software Development - cum laude distinction

Work experience

Apr 21 - now **Senior Software Engineer** · Huawei UK R&D (Cambridge, UK)

Jan 21 – Mar 21 **Compiler Engineer (contractor)** · Huawei UK R&D (Cambridge, UK)

Oct 20 – Dec 20 **Research Engineer** · Sorbonne Université (Paris, France)
LIP6 laboratory - LCHIP project
- Development of a **transpiler** for the B language to OCaml code to execute safe programs on a LCHIP board running an OCaml VM.

Dec 19 – Sep 20 **Research Associate** · University of Kent (Canterbury, UK)
"Trustworthy Refactoring" project
- Development of an **automatic refactoring tool** for OCaml code and extension to new kinds of refactorings.
- Proposed and developed a method to perform automatised **equivalence checking** between two versions of a same program.

Sep 19 – Nov 19 **Studies Engineer** · Sorbonne Université (Paris, France)
LIP6 laboratory - LCHIP project
- Worked for the **industrial LCHIP project** in collaboration with the company *Clearsy* that develops engineering methods and tools for **safety critical systems**.
- Adapted a lightweight OCaml virtual machine for a secured runtime platform that uses PIC32 microcontrollers.

Sep 18 – Aug 19 **Research and Teaching Associate** · Sorbonne Université (Paris, France)
- Finalised the redaction of my PhD thesis.
- Taught around 200 hours of computer science classes for under and post graduates.

Oct 15 – Aug 18 **Contractual PhD Student / Teaching Assistant** · Pierre and Marie Curie University (Paris, France)
- Co-creator and main developer of **a portable OCaml virtual machine** which can run on devices with very limited resources (**microcontrollers, FPGAs**,...).
- Creator of OCaLustre, **a synchronous programming language** that simplifies the programming of **concurrent embedded systems**.
- Developer of a **static analysis tool** that can deduce the worst-case execution time of an OCaLustre program for use in critical embedded systems. I formalised and proved the approach using the **Coq proof assistant**.
- Taught about 200 hours of computer science classes for undergraduates.

Internships

Feb 2015 – Aug 2015 **"Concurrent programming models for microcontrollers"** · Paris 6 Computer Science Laboratory (LIP6) (Paris, France)

Jun 2014 – Jul 2014 **"Developing a musical editor for the Web"** · Institute for Research and Coordination in Acoustics/Music (IRCAM) (Paris, France)