Computer science student
Maxime Pinard

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Student in the final year of a computer science Engineer and Master's degree program

Education and qualifications

Université du Québec à Chicoutimi — **Saguenay, Quebec, Canada**
Master in computer science — *2018 – 2020*
Currently in 3rd year, for a double degree with UTBM

Université de Technologie de Belfort-Montbéliard — **Belfort, France**
Computer science engineer diploma, imaging specialty, (eq. Master of Science) — *2016 – 2020*
3rd year done at UQAC for a double degree

Université de Technologie de Belfort-Montbéliard — **Sèvenans, France**
DEUTEC — *2014 – 2016*
Preparatory classes before the specialization

Lycée Louis Aragon (high school) — **Héricourt, France**
Baccalauréat with major in maths, with honours — *2011 – 2014*

Languages

French: Native language

Spanish: Moderate level

English: B2 (BULATS 68), Professional working level

Japanese: Basic level

Computer skills

Languages: C++, C, Java, LaTeX/TikZ, Python, Bash, CUDA, SQL, HTML/CSS, Assembly, VBA…

Methods/Tools: Agile, Unit tests, Design patterns, UML, BPMN, git, CMake, Make, Maven, Regex

Metaheuristics: Tabu search, simulated annealing, genetic algorithms, ant colony optimization algorithms, PSO

Libraries: boost, fmt, spdlog, OpenGL, OpenCV, OpenMP, MPI, GTest, Catch2, Capstone, Keystone, Json, SFML, ImGui, GLFW, GLM, libmpg123, TagLib, JavaFx, JUnit4

System administration: GNU/Linux (Debian 8+), personal server for Java EE and Docker web services hosting

IDE: Visual Studio, JetBrains IntelliJ IDEA and CLion, Eclipse

Publications

[1] J. Boulmier, F. Holweck, M. Pinard, and M. Saniga, "Veldkamp spaces of low-dimensional ternary segre varieties," *Results in Mathematics*, vol. 74, no. 1, p. 54, Feb. 2019, ISSN: 1420-9012. DOI: 10.1007/s00025-019-0974-2.

Others qualifications

o French driving license
o PSC1, *French first aid certification*

Work experiences

Institut de Recherche en Informatique, Mathématiques, Automatique et Signal, 6 months **Mulhouse, France**
Stagiaire
09/2019 - 02/2020
- Development of memetic hybrid metaheuristics for the Set Cover Problem
  and C++ high performance implementation

Ambulances Phoenix, 4 months **Héricourt, France**
Ambulance technician, Patient care and transportation
07-08/2018, 07-08/2019

Direction Générale de l'Armement Maîtrise de l'Information, 6 months **Bruz, France**
Intern
08/2017 - 01/2018
- Work on GenDbg, a multi languages / OS / architecture debugger:
  Development in C of a disassembly module for MIPS architectures and the associated unit tests
- Work on YaCo, an IDA Pro plugin enabling collaborative reverse-engineering using Git:
  Ported to C++ and improved Git repository management and IDA events handling

JAB France, 1 week **Evolène, Switzerland**
Activities supervisor, Camp of 40 young people, team of 15 supervisor
02/2016

JAB France, 1 week **Contamines, France**
Activities supervisor, Camp of 50 young people, team of 20 supervisor
02/2015

Souchier SAS, 4 weeks **Héricourt, France**
Intern, Installation of gaskets and assembly of smoke evacuation systems
01/2015

Projects

Personal
- Header-only dynamic bitset implementation and unit tests [C++, Catch2] *dynamic_bitset*
- Music player [C++, ImGui, SFML, spdlog, libmpg123] *MagicPlayer*
- Utility functions to configure C/C++ projects (clang-format, ccache, sanitizers,…) [CMake] *CMutils*
- Number base converter, example ImGui/SFML [C++, ImGui, SFML] *BaseConverter*
- Console graphical library for Windows and Unix based systems [C] *ConsoleControl*
- Dungeon crawler with procedural levels generation [Java, JavaFx] *Raoul-the-Game*
- LaTeX/TikZ implementation of the UTBM internship report covers *utbm-latex-internship-report-covers*
- LaTeX/TikZ Beamer implementation of the UTBM presentation theme *utbm-beamer-theme*
- Multiplayer Snake like game (local network) [C++, SFML] *PapraGame*

Research
- Hyperplanes calculator in dimension 4 finite geometries, (performance oriented) [C++] *HyperplaneFinder*
  > *publication* [1]

Internship
- Hex-Rays IDA collaborative reverse-engineering plugin [C++, GTest, IDA] *YaCo, Internship report (fr)*
- Assembly / disassembly module for MIPS processors assembly code [C, Capstone, Keystone, GTest] *Internship report (fr)*

School
- Algorithms for solving the Set Cover Problem [C++, spdlog, dynamic_bitset] *Set_cover_problem*
  > Exhaustive search, Greedy, Branch and Bound, Simulated Annealing, Genetic and Memetic Algorithm
- Construction and render of a 3D parametric object with OpenGL [C++, GLFW, ImGui] *ParametricObjectsConstruction*
- MiniMetro clone: subway management simulator [Java, JavaFx] *MagicMetro*
- Pogo game with MinMax/AlphaBeta AI [C++, ConsoleControl] *Pogo*
- Multi-users file storage server [C++, SFML]

Interests

Computer science: New programming paradigms, procedural generation, operational research, software optimization, cryptography and the evolution of quantum computing.

Science: Mathematics, physical system simulation, quantum physics…

Sport: Skiing and winter sports, cycling, mountain hiking, swimming (3h a week).