RECHATIN Nicolas

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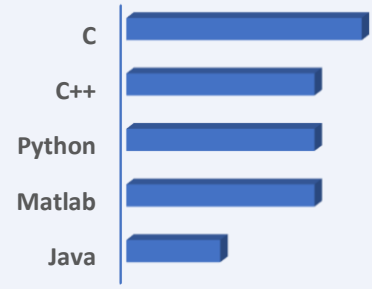
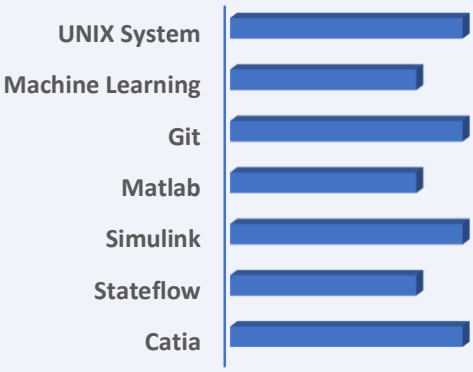
47 Av. du Dr Arnold Netter | Paris 12ème | France
26 y/o (1993) | French licences (A & B)

Engineer in control command & avionics and C/C++/Python Software developer

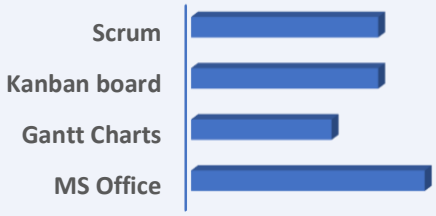
Programming



Tools



Other tools



Education

2011 - 2017

École Supérieure des Techniques Aéronautique et de Construction Automobile (ESTACA) – Graduated in 2017

- ***Specialisation : Avionics and Flight control***

Embedded system communication and architecture, Robust and Optimal control commands, MIMO and Non-linear system, Flight laws and controls, Control command by observers (Kalman filter, Sliding mode, Super-Twisting), Electronic, Aerodynamic, Civil and military avionics.

2018 - 2020

42 Paris – Software Development School

- ***Specialisation : UNIX System Architecture (C), Machine and Deep Learning (Python3), Graphic (C/C++)***

Machine and Deep Learning in Python3 : Linear and Logistic Regression, Decision Tree classifier, Multilayer Perceptron.
UNIX System and Shell : POSIX norm, AST, Hash table, State Machine, processes and job controls, File system management.
RayTracing in C++ : Antialiasing, Defocus Blur, Movement, Materials.

Professional Experience

Simulation Engineer
5th Year Internship
March – Aug. 2017

AIRBUS St Martin (Toulouse area, France) - 6 Months
In-Flight Command and System Simulation Research Team

- *Study of a simulation solution for uses of machine learning in futur aircrafts maintenance systems*

Rapid prototyping and simulation architecture study. Study of "Predictive maintenance via Machine Learning" proposed solution. Architecture and POC of a test bench. Simulation testing on full scale aircraft simulators

System Engineer
4th Year Internship
June – Sept. 2016

ALTRAN Sud-Ouest (Toulouse area, France) - 4 Months
System Engineering R&D Team

- *Test bench architecture automatisation tool development for the MBSE Software "Capella" (Thalès) for the "Test Automation" project (AIRBUS & DGAC)*

MBSE modelling, State Machines, Petri Network, UML. Development of a tool to generate a test bench architecture from a MBSE model in Java.

VLC Developer
3rd Year Internship
July – Aug. 2013

VideoLan Organization (Paris, France) - 2 Months
Software Development Team

- *VLC application UI development on a new C native OS (Tizen by Samsung).*

UI design and implementation in C, based on the Android VLC application.

Nicolas Rechatin
GitHub.com/Nrechati
GitLab.com/Nrechati

About Me

Passionate by embedded systems, AI and human-machine interfaces. I decided to supplement my engineer degree by a software development course at 42 Paris. Programming being a crucial skill in the development and prototyping of numerous innovating solutions in different fields.

This course led me to familiarize myself to new matters such as computing optimisation or resources management that are at the heart of numerous technical challenges.

I now seek to invest myself in an innovating project that will challenge my skills and help me push them further.

Languages

- French
- English
  TOEIC : 950 (2017)
- Spanish

Hobbies

Student Projects

Machine Learning specialisation final project

Machine and Deep learning model implementation in Python3 (Regression and Classification)

- *Mathematic model implementation*
- *Linear Regression, single and multi-variables*
- *Logistic Regression, with regularisation*
- *Decision Tree Classifier (impurity or entropy)*
- *Neural Network (Multilayer Perceptron) : In progress*

Engineer end of studies project

Reluctance motor control command with no sensors

- *Robust control command synthesis for the motor.*
- *Observers modelling : Sliding mode, Kalman filter and benchmarking.*
- *Failure Tolerant Command with voting algorithm between observers*

UNIX System specialisation final project

Full implementation of a UNIX Shell in C, based on POSIX standards

- *Line Edition, Lexer, Parser, AST, Environment*
- *Hashtable, History, Job Control, Autocompletion*
- *Error handling, Builtins, Redirections, Expansions*
- *Scrum master*

Engineer 5th Year Project

Modelling and scaling of a emergency power supply for aircrafts

- *Replacement of Ram Air Turbines (RAT)*
- *Hybrid power supply Fuel Cell and Super Capacitors*
- *Energy profile study*
- *Complete modelling of the final solution*

Graphic specialisation final project

Ray Tracer development and optimisation in C++ for basic geometries

- *Computation optimisation*
- *Antialiasing, Defocus Blur*
- *Materials : Lambertian, Metal and Dielectric*
- *Aliasing for real-time rendering and movement*

For more details on those projects alongside my other ones, resources and source files can be found on my Github and Gitlab

Other notable experience

8 years in catering in Paris and Monaco

Waiter, Barman and Manager in several places

- *Brasserie, Gastronomic café, Pub & Luxury restaurant*
- *Teamwork, Customer management and contact*
- *Team management, stock, quotation*