



THOMAS KOWALSKI

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 kowalski-thomas -  kowalskithomas

EDUCATION

Imperial College London – MSc in Software Engineering – 1st Expected **2019 - Present**

Modules: Advanced Databases, Advanced Issues in Object Oriented Programming, Computational Finance, Computer Vision, Concurrent Processes, Performance Engineering

Current Software Engineering Group Project:

- Automatic single-frame calibration of the LiDAR – Camera transform using a physical marker
- Projection of 3D data on images and visualisation of the environment using C++ / OpenCV
- Detection of vehicles and pedestrians using deep-learning algorithms

Optional Research Project: Empirical performance evaluation of in-memory join algorithms for databases under high-locality datasets (literature survey, C / C++ implementation and benchmarking)

Individual Research Project to be undertaken in Summer 2020

ENSIIE Paris (French école d'ingénieur) - GPA 3.5 - Top 5% **2017 - 2019**

Modules: Complexity, Compiler Design, Computer Architecture, Deep Learning, Databases, Formal Languages and Systems, Functional Programming using OCaml, First Order Logic & Proofs, Networks, Object-Oriented Programming, Operations Research, Probabilities and Statistics

Projects: Finding solutions to large instances of the traveling salesman problem under time constraints (OCaml), designed and implemented a CPU, implemented a ray-tracing rendering software (C++), created a deep neural network to recognise hand-written characters (Python / TensorFlow)

CPGE Lycée Blaise Pascal (France) **2015 - 2017**

Two-year undergraduate intensive course in mathematics and physics.

- Took national competitive examination for admission to the French "Grandes Écoles"
- Undertook a year-long research project in computer science and optimisation (TIPE)

EXPERIENCE

TestWE R&D – 3 months placement **Summer 2019**

- Implemented new features on the TestWE examination application (C++)
- Benchmarked and carried out performance improvements in desktop application modules
- Engineered new computer vision components using OpenCV / C++
- Integrated computer vision components into the Qt application

Piton de la Fournaise Volcano Observatory (CNRS) – 2 months placement **Summer 2018**

- Created a new highly-configurable automatic phoning system for critical alerts using Asterisk (Java)
- Programmed new tests for edge cases, both for both legacy and new components of the system
- Designed a fail-safe component to rely on a secondary server instance in case of a failure
- Refactored the code to the latest standards and established efficient delivery and dependency management practices
- Delivered a Docker image that can be used to effortlessly deploy the EarlyWarning application
- Developed an autonomous, low-energy weather station to be deployed on the field (C++)

Dièse Junior-Entreprise – Contractor in C++ **2017 - 2019**

- Specified, designed, coded, tested and deployed in-house applications for small and medium-size businesses using Qt.

Clermont-Auvergne University – CPGE Second-Year Research Project

2016 - 2017

- Specified the exact needs after a request from the French *École Navale*
- Carried out an initial literature survey of existing heuristics for hard scheduling problems
- Formulated a new hybrid algorithm taking its roots in genetic algorithms and simulated annealing
- Compared my results with the ones found in the literature
- Delivered a usable schedule creation utility based on the new method (implemented in C++)

ADDITIONAL EXPERIENCE

Tutor in Mathematics & Physics

2017 - 2018

- Helped high school students reach their full potential before taking the *baccalauréat*
- Supported CPGE students through difficult moments and before their examinations
- Provided high-potential pupils "food for thought" with maths and physics from higher education

SAYENS – Three weeks placement

September 2018

- Reviewed and evaluated JavaScript frameworks for interactive cartography and Earth representations
- Delivered a thorough guide describing how to implement features required by the business using both CesiumJS and NASA WorldWind.

SKILLS

Programming skills	Modern C++, Qt, C, Java, Python, SQL databases, x86
Tools	Git, Trello, CMake. Experience with GitLab-CI and Docker
Project management	Agile methods, Extreme Programming (frequent iterations, pair programming, continuous delivery)
Languages	English (fluent), French (native speaker)

EXTRA-CURRICULAR

Communications Manager – ENSIIE Students' Union

2018

- Lead communication to students through email campaigns, newsletters and social media
- Approached businesses in order to establish new partnerships aimed at ENSIIE students
- Took part in the organisation of students' union events

Secretary General – HumanIIE - ENSIIE Charity

2017

- Scheduled, attended and took minutes at all meetings
- Directed communication to university students with e-mail campaigns
- Arranged funding opportunities (gift wrapping in shops, plastic cap collections...)
- Managed part of the legal paperwork regarding the team's stay abroad

Laureate of the "Challenge Projets d'Entreprendre"

May 2019

Presented a solution to develop research and reinforce our knowledge of honeybees and their behaviour, by combining beekeepers' expertise, regular sensor measurements and artificial intelligence

INTERESTS

Music	Play classical piano, play guitar and sing along
Volley-ball	Played in competitions for six years
Photography	Interest for portrait photography, part of ENSIIE photography society, photographer at Students Union's events
Cooking & Baking	Try to combine taste and healthiness

References available on request