GUILHEM CHARLES

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🔗 website

github.com/chagui

guilhemcharles

My boy-scout rule: Always leave the code better than when I found it.

EXPERIENCE

JW Player
Video technology
Jan. 2020 – Present
Netherlands, Eindhoven

Technologies
Python 3.8, Kafka, AWS, RabbitMQ, PostgreSQL, Docker, Kubernetes, Buildkite.

Senior Software Engineer Backend – Livestream

Responsibilities:
Build highly scalable, performance-oriented systems around livestream workflows; over hundred million of minutes per month. Design processes and build APIs, infrastructure, pipelines, testing, monitoring, etc.

Achievements:
- Reduced external storage costs by an estimated $500k by automating the import of assets produced at a third-party vendor
- Designed and developed an auditable event ingest system that scales horizontally by combining Kafka, RabbitMQ and Python services
- Reduced build time and docker image size by implementing a multi-stage build, leading to 50% faster CI pipeline and 10% faster image pull

Mapscape
Navigation maps
Nov. 2018 – Jan. 2020
Netherlands, Eindhoven

Technologies
Python 3.7, AWS (lambdas, SAM, ECS, RDS, etc.), Docker, Bash, Jenkins.

Software Engineer Backend – Connected Services

Responsibilities:
Build a serverless platform to deliver the most efficient updates over-the-air to vehicles. Design and build APIs, infrastructure, pipelines, monitoring, etc.

Achievements:
- Reduced computation time by 90% by developing an improved optimal update path finding algorithm leading to computation taking seconds instead of minutes
- Developed the map update ingest workflow using AWS s3, lambdas and step functions and Python
- Representative in a technical workgroup of the NDS consortium in charge of designing the new generation standard for map data in automotive eco-system
- Awarded by the executive committee as one of 4.500 employees globally for my work on the build systems and continuous integration pipeline

Sep. 2015 – Nov. 2018

Software Engineer Infrastructure – Test Tools

Responsibilities:
Build geographical data processing and visualization tools, automation frameworks and infrastructure used by the validation department to visualize, inspect, test, and validate production maps.

Technologies
C++, CMake, gcc, Python 3.7, Docker, SQLite, Bash, valgrind, Jenkins.

Achievements:
- Reduced regression testing time from 2 days to 4 hours by creating a distributed testing framework on a cluster of machines
- Re-designed the CMake build scripts, to comply to modern standards and leverage modularity, reducing build time by 20%
- Increased application FPS by three-fold with multithreading by re-designing map rendering algorithm to parallelize code
- Update application scripting from in-house domain specific language to Python, leading to more expressive and correct scripts

Lumiplan
Smart Mobility
Sep. 2012 – Sep. 2015
France, Grenoble

● **Apprentice Software Engineer**

Responsibilities:
Worked on various research projects aiming to improve observability and management of vehicles. Developed software for real-time embedded applications, in which performance, robustness and reliability are crucial, and desktop application to manage the fleet.

<u>Technologies</u>
C++ (POCO), CMake, C, C#, SNMP, Windows, Linux, Bash, Keil OS.

Achievements:
- Improved reliability, reduced time and cost for both installation and maintenance by developing an auto-configuration solution for on-board equipment
- Improved monitoring of on-board equipment by developing SNMP agents

Aix-Marseille University
Sep. 2011 – Mar. 2012
France, Aix-en-Provence

● **Graduate Teaching Assistant**
Selected as one of the 5, out of 200 hundred students, to teach first year students algorithm, database, software development (C/C++ and Java), operating system and network.

EDUCATION

KTH - Royal Institute of Technology
University Exchange: Computer Science and Communication Department
Machine Learning, Distributed Systems and Computer Security

2014 – 2015, Sweden

ENSIMAG - Grenoble Institute of Technology
MSc Computer Science and Applied Mathematics

2012 – 2015, France

Aix-Marseille University
Technical degree in Computer Science

2010 – 2012, France

PET PROJECTS & VOLOUNTEERING

Investment Tracker (Golang, GraphQL, MongoDB)	2019 - 2020
Cryptocurrency Miner (4 GPUs)	2015 - 2017
Boyscout leader - Scouts et Guides de France	2010 - 2014
Information System Manager - ENSIMAG Students Union	2013 - 2014