Mathieu Lacage   mathieu.lacage@cutebugs.net

Software Engineer

Experienced Software Engineer seeking hands-on technical role.
I write code and build cloud infrastructure to create secure applications that scale.

Technical Experience

Technology

- Languages: C, C++, Python, SQL, Go

- Infrastructure: MySQL, Ansible, uWSGI, Prometheus, Grafana, Loki

Skills beyond just writing code

- Communicate clearly complex problems and solutions

- Help other members of the team grow their skillsets

- Debug and track down problems of the entire software/hardware stack

- Stay cool under pressure when all systems appear to be down

Hive, 2023 – Present, Software engineer

Improve scaling and reliability of a go p2p application:

- Design and execute metric collection, analysis, monitoring, and alerting spanning centralized infrastructure and a p2p network

- Debug and fix network and IO problems to scale the Hive p2p network

- Build developement, testing, and debugging tools

- Plan and manage component-level testing strategies

Alcmeon, 2011 – 2023, CTO, co-founder

As CTO, I

- Deployed practical solutions to improve the confidentiality without impairing the availability of customer data via at-rest encryption, and, centralized access control.

- Scaled our code and infrastructure to sustain 50% YoY volume growth with 1000% YoY peak volume growth.

- Recruited and led the technical team (8 years)

- Grew and directly managed the engineering manager and product director.

As co-founder, I focused on

- Delivering high quality customer support

- Product design to ensure we build features that grow our business

- Presales to help close deals with prospects

Select projects

- Pub/Sub Streaming websocket server that scales to 10K concurent connections per cpu

- Zero-downtime scale up of a single database with a single table to partionned databases per customer, 250 tables, 1TB

- SSO integration in SSH

- Designed and implemented a security policy spanning infrastructure and application-level code

INRIA, 2005 – 2011, Software Lead ns-3

Built ns-3, an open-source network simulator now used in hundreds of research publications every year.

- Designed and implemented core APIs: object model, network packets, event scheduler

- Implemented models for UDP/IP/ICMP, MAC/PHY Wi-Fi network protocols

- Integrated unmodified real-world network protocol implementations

But also:

- Recruited, and managed local development team (5).

- Relocated to University of Washington for 10 months to initiate collaboration with US team.

- Evangelized use of ns-3 within other research institutes via presentations and seminars.

- Published as main author (4) and co-author (3) papers on ns-3.

INRIA, 2003 – 2005, Software Engineer

Designed and built software for network research teams:

- Yans, a C++ event-driven simulator,

- NEPI, a python tool used to describe, deploy, and control networking experiments on hundreds of hosts distributed all over the planet.

Provided software mentoring to research projects involved in bio-reactor chemical reaction control and medical image analysis.

Sigma-Designs, 2001 – 2003, Software Engineer

Implemented DVD navigation control software for the video decompression chips that were developed by Sigma-Designs and sold to OEMs to build consumer DVD players.

Education

2006 – 2010	Ph.D. at University of Nice, *Experimentation Tools for Networking Research*, under supervision from Walid Dabbous
1998 – 2001	Engineer at Telecom ParisTech (ENST), Software Engineering, Networking, Micro-Electronics