Mathieu Lacage mathieu.lacage@cutebugs.net

Software Engineer

I build secure products backend-side, from server infrastructure to application-level software architecture and implementation

Technical Experience

Infrastructure

- Scaled https termination frontals and application servers to 300 requests/s peak
- Scaled from one database/one table to partionned databases, 250 tables, 1TB.

Security

- Designed and deployed a security policy across infrastructure and application-level code.
- SSH access control via an OpenID SSO.
- Disk-level at-rest encryption of customer data via HCVault.

Development

- Web applications with Python for transactional use-cases, but also websocket event streaming, and asynchronous jobs.
- System-level C and C++ software for virtualization and simulation.

Alcmeon, 2011 – 2023, CTO, co-founder

As CTO, I focused on:

- Leading the development of Alcmeon's product across our infrastructure, Machine Learning magic, Python backend, SQL database, and Angular frontend.
- Recruiting and managing the engineering team (13) and the enginneering manager in charge of research, development and operations.
- Defining and implementing a Security Policy.

As co-founder, I invested a lot of time in product management, customer support, and, pre-sales.

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 kernel-space and user-space network protocol implementations: implemented a binary-compatible ELF loader and POSIX-compatible APIs.

But also:

- Recruited, and managed local development team (5).
- Relocated to University of Washington for 10 months to initiate collaboration with US team-mates.
- Evangelized use of ns-3 within other research institutes through presentations and seminars.
- Published as main author (4) and co-author (3) papers on the design of ns-3 and some of its models.

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 developped 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