

Pierre-Antoine Rault

Fullstack Engineer

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📍 Zollstock, Köln

languages

french native
english C2
german B1

codes in

Python
TypeScript
Bash
Jsonnet
YAML / Compose
Sprig / Helm
Erlang / Elixir
C / Rust
L^AT_EX

open source

PeerTube (maintainer)
OLKi (architect)
Mute (employee)
WebTorrent (contributor)
YunoHost (contributor)
ArchLinux (contributor)
and 30+ more at:

🐙 github://rigelk
📄 git framagit://rigelk

strength

black belt in karate
years of tinkering bikes
8 years of scuba diving in a
high pressure environment

certifications

Cambridge ESOL Level 2
(#0039513800)

publications

hal-04224855
arxiv:2004.09966

education

PhD INRIA, LORIA Nancy 2021-2025
RBAC policies using Conflict-free Replicated Data Types (CRDT) for distributed DB systems
CS master Polytechnique, Télécom ParisTech / UNice 2016-2018
Cloud and data center networks | with honors
CS bachelor Erasmus year @ Freie Universität Berlin / Université de Nantes 2013-2016
SCADA/IoT/ML | representative for international relations | with honors

experience in a team

Mute: distributed web collaborative editor INRIA/LORIA, Nancy 2021-2024
Collaborative text editor storing data in CRDTs. Took part in refactor from legacy P2P layer to one based on IPFS. Angular 6 to 14 refactoring on 10k SLOC. QA and CI/CD for a team of three developers. Baremetal deployment using Docker. E2E tests and N3S simulations on Grid5000. gitlab.inria.fr/coast-team/mute (Typescript/Angular/PNPM/WebRTC)

PeerTube: federated web video platform Framasoft, Lyon 2017-2021
Maintainership of a video streaming platform federating via ActivityPub with 10k+ stars and 4k+ contributions on GitHub. Networking work on HLS, WebTorrent for P2P video streaming. Extension of the REST API with SQL optimization. Unit, integration and E2E tests. Took part in W3C committees/conferences for ActivityPub. Steering and code reviews of hundreds of third-party contributions. joinpeertube.org (Typescript/Angular/OpenAPI/Sequelize ORM/PgSQL)

OLKi: federated scientific dataset platform LORIA, Nancy 2019-2020
Agile development of a social scientific data platform federating via ActivityPub (6M+ users). CI/CD on a Kubernetes cluster. Coordination with multiple scientific laboratories to define work packages. Semantic web RFC written. Unit, integration and E2E tests. gitlab.inria.fr/coast-team/mute (Typescript/NuxtJS SSR/Python/Poetry/Django/GraphQL/PgSQL)

Securing visioconferences for Cisco Webex Cisco, Paris 2017-2018
State of the art survey and implementation of Group Key Exchange for securing 13M+ P2P connections in Webex. framagit.org/rigelk/gka-libparc (C/OpenSSL/Info.-Centric Network)

AI for voice recognition in chatbots Aaron AI, Berlin 2016
Speech categorization in chatbots using Hidden Markov Models. Initial prototype for authentication via voice chatbot ; now part of Doctolib. (Python/PyTorch)

Embedded Linux radio firmware updater Thales, Cholet 2015
Web app to upgrade via Yocto for OTA updates. Angular app w/ Websockets and HTTP/2 transfers. (ES6/Bower/Npm/C/BeagleBoard)

self-taught experience

Homelab , since 2017
30+ docker compose services for 10+ users with SSO. Vault secrets management. Proxmox and Kubernetes clusters. Remote access through Wireguard w/ IaC via Terraform. framagit.org/rigelk/infra (Hashicorp Vault/OIDC/LDAP/ArgoCD)