

# Andrey Popp

Software Engineer | [me@andreypopp.com](mailto:me@andreypopp.com) | <https://github.com/andreypopp>

Interests include query systems and databases, user interfaces for data query and CRUD (visual query builders, computational notebooks), developer tooling (package managers, build systems, low-code).

Most of the production experience is with OCaml, Python, PostgreSQL, JavaScript/TypeScript, less so with C, Julia, Scala, Erlang.

Have operations experience with Linux, PostgreSQL, terraform, k8s, ansible, Google Cloud Platform.

Can work highly autonomously and as a part of a team (including domain experts and other non technical roles), can lead small/focused technical teams.

## Work Experience / Projects

- **Open source software development services for Caml Works, 2022**

Designed and built [dream-social-login](#) library (OAuth2 & OpenID Connect authentication for Dream Web framework).

Implemented a series of proof of concept Dream example applications:

- [Password+optional TOTP authentication](#).
- [Provisioning certificates via ACME protocol / TLS-ALPN-01 challenge](#)

- **Mechanize Systems, 2021-2022**

Worked on designing and implementing a platform for data management and workflow automation. The platform included:

- Typed relational query language, implemented in OCaml, compiles to SQL
- Typed business workflow automation language, implemented in OCaml
- Data Integration system built on top of PostgreSQL with Foreign Data Wrappers.

- **Prometheus Research/IQVIA, Software Engineer/Engineering Manager, 2019-2021**

Led a team to deliver a data management platform for COVID-19 tracking. The platform included: data ingestion pipelines for metadata, medical data (lab results), sensor data (movement trackers); analytical tools and pipelines; rule based workflow automation. The platform was shipped to serve multiple NBA and NFL seasons.

Led a team to deliver a Patient Cohort Builder query tool, a customizable web application used for medical researchers. The app was shipped to multiple research institutions (among them ASH, MMRF, ADA).

Worked on [RexGraphQL](#), a DSL to declaratively define GraphQL API endpoints on top of SQL databases. Was shipped as a part of multiple client projects.

- **Open source software development services for Facebook**, 2017-2019

Designed and implemented [esy](#), a package manager for compiled languages (focused around OCaml/Reason) and inspired by opam, npm and nix package manager.

Started an initial implementation of an LSP (Language Server Protocol) frontend for merlin, now known as ocaml-lsp.

- **Prometheus Research**, Software Engineer, 2014-2017

Worked on [RexDB](#), a low-code platform for health care experts to build data management applications.

Implemented RexDB UI framework for rapid application development; built on React, tightly integrated with relational databases. The UI framework was used to deliver multiple client projects and internal tools, it is still in use as of 2022.

Implemented a [Visual Query Builder], a Web GUI for assembling relational queries (including support for joins and aggregations). Was shipped as a part of multiple client projects.

- **Dream Industries**, Software Engineer, 2011-2014

Worked on a backend system of a music streaming service (Zvooq). Built meta-data management system in Python/PostgreSQL: ingestion pipeline, named entity recognition & disambiguation; organized processes for manual case management.

## Education

- **Master degree in mathematical physics**, ITMO University, St. Petersburg, Russia Master's thesis: "Asymmetric Stokes flow inside cylinder due to point rotlet"