

Alessio Novi

Software Engineer

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Technical Experience

Creator, Software Engineer, Willow

01/2024 – present

Willow (willow-cdc.github.io) [🔗](#) is an open-source framework for creating change data capture pipelines, reflecting database changes to a cache in near real-time.

- Developed a change data capture framework to detect PostgreSQL database row-level changes and update a Redis cache, leveraging open-source tools such as Debezium and Apache Kafka.
- Architected and implemented a RESTful API to facilitate pipeline creation and teardown (Node.js, Express).
- Built a custom Kafka connector to consume and process Debezium-generated change events sent to Kafka, enabling event-driven cache updates and the handling of edge cases, such as tombstone events, ensuring only database row-level data is reflected into a cache (Node.js, KafkaJS, Redis).
- Designed a UI-based multi-step form, abstracting away Debezium and Kafka configuration process in setting up a change data capture pipeline, reducing the number of steps from 6 to 3 (React, Material UI).
- Implemented logic to prevent Debezium failure when provided with a PostgreSQL minimum privileged user, ensuring adherence to the principle of least privilege (PoLP) in order to avoid the need to provide a user with superuser privileges.
- Authored technical case study [🔗](#)

Software Engineer, Self Employed

2022 – 2024

Built numerous back-end, front-end, and full-stack apps including:

- BinBucket - A request-bin-like tool for receiving and debugging webhooks (Express, React, MongoDB, PostgreSQL, Socket.io).
- Kontaks - An application for storing, updating, and searching for contacts (Express, Handlebars, PostgreSQL).
- RPSLS Game - A browser-based Rock Paper Scissors Lizard Spock game (Ruby, Sinatra, ERB).

Skills

Languages

JavaScript (ES6+), TypeScript, Ruby, SQL, Golang

Runtimes, Libraries & Frameworks

Node.js, Express, React, Sinatra, Socket.io, Material UI, ERB, Handlebars

Misc. Technologies

Linux, PostgreSQL, MongoDB, Object-oriented programming, Docker, Git/GitHub, REST APIs, Debezium, Apache Kafka, Redis

Professional Experience

Export Freight Forwarder, GDT Logistic SPA

2017 – 2022

Conducted daily operations related to container shipping in a constantly changing fast-paced environment, liaising with local and international customers.

Education

Launch School

2022 – 2024

A multi-year mastery-based curriculum teaching full-stack engineering fundamentals from first principles [🔗](#)

MSc Marine Transport with Management, Maritime Studies,

2015 – 2016

Newcastle University