

# waltersschulze

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## location

London, UK

## programming

Coq, Golang, Haskell,  
Elm, Erlang, Latex

## open source

Katydid:  
Validation Language  
for Deeply Nested  
Structures

Goderive ★950  
Derives Go functions

GoGraphviz ★460  
Parser for Graphviz

gogoprotobuf ★5000  
Protobufs for Go

erlfmt ★320  
Formatter for Erlang

## publications

IEEE Multimedia:  
Music Generation with  
Mixed and Higher  
Order Hidden Markov  
Models

## talks

📺 Recorded Talks  
📺 Ragalur Expressions  
slides.com/awaltersschulze

## interests

Proof Assistants  
Guitar  
Music Production  
Stand-up Comedy

## employment

2021 ... ∞ **Meta** London, UK  
*Frontend UI Engineer:* React, Hack  
Developed device managed UI for Portals. Conducted behavioural interviews.

2020 – 2021 ☎ **WhatsApp** London, UK  
*Erlang Types and Tooling Engineer:* Erlang  
Projects included: erlfmt: A code formatter for erlang, a code generator for concurrency and VSCode integration. Conducted coding interviews.

2018 – 2020 📘 **Facebook** London, UK  
*Senior Software Engineer:* Haskell, Python, Rust  
Extended security eDSL in Haskell, which significantly reduced false positives. Integrated QuickCheck into Haxl. Maintained the company's test runner. Designed foundation for new test runner using a Monad with Monoid constrained elements to create a batched stream for concurrent test running. Mentored students.

2016 – 2018 🏠 **eBay Classifieds Group** Amsterdam, The Netherlands  
*MTS1 Software Engineer:* Elm, Go, Docker, Filebeat, Cassandra, Kafka, Consul, Nomad, Grafana, Kibana and Jenkins  
Created a translating reverse proxy that shows eBay ads on classifieds sites, serving 2000 requests per second. Added an A/B testing framework, role based login using LDAP and a new Frontend using Elm. Interviewed over 50 candidates, provided support for five local markets and served on the global Architecture team.

2011 – 2016 🏠 **Vastech** Stellenbosch, South Africa  
*Query Language Developer:* Go, Protobufs, Javascript  
I was part of a team that developed a distributed database from scratch, for fast writing of time series data. I was responsible for the query language, matching algorithm, metadata serialization, index configuration, update method for our write only database and the UI. I also initiated the company's open source policy and founded and lead the intern program.

2006 – 2011 🏠 **Various companies** South Africa  
*Mobile Developer:* Java  
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## education

2014 ... 🎓 **PhD Informatics (part time):** Coq, Haskell, Go Stellenbosch University  
Currently busy working on a validation language for tree structures and proving it's correctness in Coq.

2007–2009 🎵 **MSc Computer Science (cum laude):** Python Stellenbosch University  
*A Formal Language Theory Approach to Music Generation*  
Generated music with Mixed order Hidden Markov models.

2003 – 2006 🎓 **BSc Honours Computer Science:** C, Java Stellenbosch University