walterschulze
programmer

contact
London
UK

awalterschulze at
gmail
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linkedIn profile

languages
bilingual in Afrikaans
and English

programming
Expert:
Elm, Golang, Protocol
Buffers

Proficient:
Haskell, Git, BNF,
Latex, Docker

Forgotten:
Python, Java, Matlab,
XSLT, PHP, SQL, C,
Assembler, Delphi,
Turbo Pascal

employment

2018 ...   **Facebook**   London, UK
Software Engineer
Starting

2016 – 2018 **eBay Classifieds Group**   Amsterdam, The Netherlands
Elm and Go Developer
Since August 2016, I was in the Global Systems Team that develops services for classified sites around the world.

- Single handedly took over maintenance and development of treeBay, a translating reverse proxy that shows eBay ads on classifieds sites. Tools used: Elm, Go, Docker, Filebeat, Cassandra, Kafka, Consul, Nomad, Grafana, Kibana and Jenkins.
- Replaced an Nginx proxy, handling 2000 requests per second, with a new Go proxy for flexibility and simplicity.
- 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 for Distributed Database
Vastech is a company that develops and sells hardware and software that is used for massive passive surveillance of communication networks.
I was part of a team that developed a distributed database from scratch. This database was focused on fast writing of time series data. We developed this all in Go.
Amongst other things I have:

- Designed and developed the query language and matching algorithm.
- Refactored and redesigned the metadata serialization scheme.
- Initiated and developed the company's open source policy.
- Redesigned our schema and index configuration from a compile time to run time configurable dependency.
- Coordinated a design with the team and developed the update mechanism for metadata in the write only distributed database.
- Developed and lead the intern program. This consisted of more than 20 unique interns over a period of 2 years and a maximum of 12 at one time.

2010 – 2011 **Entersekt**   Stellenbosch, South Africa
Junior Mobile, Backend and Language Developer
Developed a Java and J2ME code generator in Python for a scripting language interpreter on your phone. Also assisted on various other projects involving: PHP, SQL, XML-RPC and Network Security.

before 2010 **more**   South Africa
Various Mobile Developer Jobs, Part Time Consultant, Teaching Assistant and Intern
Please see my LinkedIn Profile

education

2014 ...	**PhD** in Computer Science **(part time)**	Stellenbosch University

At present I am actively working on a validation language for tree structures. This is all being open sourced at github.com/katydid. I have also built a playground at katydid.github.io/play to help with getting quick feedback from potential users.

2007–2009	**MSc** in Computer Science **(cum laude)**	Stellenbosch University

A Formal Language Theory Approach to Music Generation
We investigate the suitability of applying some of the probabilistic and automata theoretic ideas, that have been extremely successful in the areas of speech and natural language processing, to the area of musical style imitation. By using music written in a certain style as training data, parameters are calculated for (visible and hidden) Markov models (of mixed, higher or first order), in order to capture the musical style of the training data in terms of mathematical models. These models are then used to imitate two instrument music in the trained style.

2006	**BSc Honours** in Computer Science	Stellenbosch University

Year project (passed with distinction): A bridge type card game which is played on mobile phones against each other. This included the implementation of a J2ME Client, Java Server, Database and Artificial Intelligent Players. Included courses on: Advanced Algorithms and Data Structures, Pattern Recognition, Artificial Intelligence, Simulation, Applied Automata Theory, Embedded Systems Programming and Concurrent Programming.

2003 – 2005	**Bachelor** of Computer Science	Stellenbosch University

Included courses on: Operating Systems, Low Level, Cryptography, Networks, Coding Theory, System Design, Algorithms and Data Structures, Databases and Formal Language Theory.

2011 – 2016	**Various Online Certificates**	Coursera and Edx

Please see my CV repository

publications

2010	**Music Generation with Mixed and Higher Order Hidden Markov Models**	IEEE Multimedia

Walter Schulze and Prof Brink van der Merwe

awards

2013   **Developed and Lead Intern Program**   Vastech
We started with about 2 interns per year. I developed and lead the intern program up to the point where we now take up to 17 interns per year. I was given one of the three awards Vastech gives out every year.

open source projects

2015   **Katydid**   Haskell, Go, Serialization Formats, PhD
Validation Language for Deeply Nested Structures

2017   **Goderive**   Go, Code Generation, Functional Programming
Derives mundane golang functions that you do not want to maintain and keeps them up to date

2012   **GoGraphviz**   Go, Graphviz, Parser Generator
Go Parser for Graphviz's Dot Format

2013   **gogoprotobuf**   Go, Protocol Buffers, 1700+ Stars
Protocol Buffers for Go with Gadgets

interests

professional: Automata, Parsers, Programming Language Design, Category Theory
personal: Guitar, Music Production, Music Technology