Kjell Winblad, Ph.D.

web: <u>https://winsh.me</u>, (Personal), <u>https://dupwin.se</u> (Company), mail: <u>kjellwinblad@gmail.com</u> tel: (0046) 73 053 50 89 Summary



PROFESSIONAL EXPERIENCE

2024 Sep -	Founder and Software Engineer (<u>PingisKompis.se</u> / <u>PingFriend.com</u>)			
Present	Role: Developer of a new platform to make it easy for table tennis players to connect Technology stack: Python, Flask, MongoDB, JavaScript, React, AI APIs and tools Tasks and Achievements:			
	Developed and launched a web-based platform that connects table tennis players			
	and clubs:			
	 Player and club discovery features: 			
	 Location based advertisements 			
	 Messaging system 			
	• Multilingual support:			
	 Automatic translation for 25 languages (easily extendable) 			
	 Forum with dedicated sections for all supported languages Email based and QAuth authentiaction 			
	 Integrated Stripe for future monetization and navment processing 			
	 SEQ and digital marketing to drive traffic and user engagement 			
	• Infrastructure for automatic multi-node deployment using Docker Swarm			
2022 Mars -	Software Engineer at <u>EMQX</u>			
2024 August	Role: Software Engineer with focus on MQTT, Erlang and NIF extensions written in C			
(Contract)	Technology stack: Erlang, C, Rebar3, the MQ11 protocol, EMQX Messaging Platform Tasks and Achievements:			
(Contract)	• Improvements to Frlang's NIE library for executing in (https://stedolan.github.io)			
	filter programs			
	• An LRU Cache for jq filter programs			
	SASL Authentication for Erlang's Kafka library Brod			
	 Many bug fixes and improvements to EMQX's MQTT message broker 			
	<u>Added support for MongoDB 5.1+ in an Erlang MongoDB driver</u>			
	• Large refactoring of EMQX bridges (to databases and streaming software like			
	Apache Kaika, AwS Kinesis, Kabbiling, Oracle, MySQL, PostgreSQL, MongoDD, Cassandra, and many others) so they are split into an action component and a			
	connector component (that can be shared between multiple actions)			
	 Tracing support for EMQX's rule engine 			
	Documentation writing			
0001 N	Te als Teams of Leasers AD			
2021 NOV - 2022 Feb	Role: LUDB plugin developer and bug fiver			
2022 190	Technology stack: LLVM, LLDB, C++, Python, Robot Framework			
(3 months	Tasks and Achievements:			
contract)	 Made most common debugging functionalities work (source level stepping, 			
	breakpoints and backtraces)			
	 Implemented automated tests for the debugger with Robot Framework and 			
	LLDB's Python scripting support			
	• Made a guide (including a video tutorial) describing how to debug programs			
	running on imsys hardware/simulator inside vS Code			
2019 Jan –	Erlang/OTP team at Ericsson			
2021 Nov	Role: Software Engineer in the Erlang/OTP Virtual Machine Team			
	Technology stack: Erlang, C, Unix, Make			
(~6 months parental leave)	Tasks and Achievements:			
	• New scalable back-end data structure for ETS ordreded_set. See <u>PR-1952</u> and			
	blog post.			
	 Scalable counters for E15 tables. See <u>PR-2190</u>, <u>PR-2229</u> and <u>blog post</u>. Design and implementation of source-to-source transformation tool for 			
	automatically creating yielding C code. This tool is used to make Erlang systems			
	more responsive and to make the scheduling of Erlang processes more fare.			
	See <u>PR-2396</u> .			
	 Design and implementation of a message sending optimizations that makes 			
	message sending between Erlang processes perform up to 300 times better than			
	before when multiple processes send messages to a single process. Erlang is a			
	concurrent programming language where the core communication primitive is			
	 Test driven development of new features and functionalities 			
	 Handling support errands from our customers 			
	• Handling of pull requests and issue reports coming to our GitHub repository from			
	open source Erlang users			
	 Internal investigations of new features and processes 			

	 Internal presentations and discussions about new optimizations and language features Usage of Docker for testing and debugging 		
	Usage of Docket for testing and debugging		
2018 Sep -2019 Jan	 Ericsson, Baseband Software Developer Role: Software Engineer Technology Stack: C, Baseband telecom software Tasks and Achievements: Implementation of automatic tests and experiments for new system feature Ported a large code base to a new C compiler Fixed issues reported by a new static analysis tool for C code 		
2012 Aug – 2018 jun	Multicore Synchronization and Concurrent Data Structure Researcher at Uppsala University (Ph.D. Candidate) Roles: Teacher, Researcher, Scientific Writer, Programmer of tools for experimentation,		
(8 months parental leave)	teaching and research Technology Stack: Python, Java, Scala, Docker, Erlang, C, Standard ML and Matlab, NodeJS, Express, PHP Tasks and Achievements:		
	 Invented, implemented and analyzed lock-based and lock-free concurrent data structures for ordered sets and maps (the contention adapting search tree and the lock-free contention adapting search tree). The data structures performed better than the state-of-art in many scenarios at the time of publishing. One of the data structures has been integrated into Erlang's in-memory database ETS. Invented, implemented and analyzed a new concurrent adaptive priority queue called the contention avoiding concurrent priority queue. The data structures performed better than the state of art in many scenarios at the time of publishing. Co-invented, implemented and analyzed a new synchronization technique called QD Locking. The locking primitive performs extremely well under heavy load, is simple, and easy to extend with new functionalities such as NUMA-awerness and and read-only critical sections. Teaching assistant for the courses: O Data Structures and Algorithms II (4 instances). Corrected assignments, handled computer lab sessions and implemented (NodeJS and Docker) an automatic web-based testing system that the students could use to check their assignments before submission. Functional Programming (Standard ML, 4 instances). Helped the students in the computer lab, wrote tests for grading and corrected assignments. Semantics of Programming Languages (3 instances). Corrected assignments in computer labs. Member of the group responsible for maintaining the IT-department's website (1 year). Programming and bug fixing in PHP. Presented publications in five different international conferences and did multiple internal presentations at Uppsala University. Main author of seven different peer-reviewed papers and co-author of three more. Completed graduate level courses about: testing of concurrent and parallel software, parallel and concurrent programming, concurrent data structures, advanced data structures, technical writing, compiler		
2012 Jan- 2012 Aug	 Tacton AB, Full Stack Developer Role: Software Engineer and Consultant Technology Stack: Java (Backend), JavaScript, jQuery (Frontend) Tasks and Achievements: Implemented and tested customer specializations for Tacton's configuration and billing software. Java and JavaScript programming Design of user interface components (HTML, JavaScript) 		

²⁰⁰⁷ Aug-
2011 AugDigital Route AB, Java Software Engineer
Role: Java Software Engineer for Digital Route's mediation system

(1)	Technol	ogy Stack: Java, Java Swing, Python, Android SDK, Apache Web Services			
(leave of	Taks and Achievements:				
absence	Bug fixes and maintenance				
between 2008	• New compression module for Digital Route's mediation system				
Jun and 2010	• Significant contribution to t Digital Route's web services module				
Jun for master	•	New graphical user interface components (Swing)			
studies)	•	Performance analysis and improvements			
	•	Android Application to monitor and interact with Digital Route's software			
	•	Design and implementation of automated tests (Python)			
2009 Aug-	Zyked, Software Consultant				
2011 may	Technol	nology Stack: Objective-C, SQLite			
Role: Implementation of an iPhone Running App called <u>Zyked</u> that was release					
(Part Time)) Apple iPhone app store. Zyked was a game where uses could create tracks using the				
	iPhone's	GPS. The tracks could be uploaded to the server component so other users could			
	compete	on them.			
	Taks an	d Achievements:			
	٠	Objective-C implementation of the app			
	•	Interaction with the REST API for the server component			
	•	Managing persistent data using SQLite			
2005 Aug -	Teachin	g Assistant at Umeå University. Sweden			
2006 Jun	Role: Teaching assistant for three different courses while studying				
5 5 5	Tasks a	nd Achievements			
(20%)	•	Corrected assignments and was resposible for computer lab sessions for the			
× ,		following courses			
		0 Object-Oriented Programming with Java			
		0 Fundamentals of Computer Science			
		0 Functional Programming			
EDUCATION	[
	2004-2007	Bachelor FScience, Computer Science – Umeå University, Sweden			
		Bachelor Thesis, Courses and grades			
	2008-2010	Master of Science, Computer Science – Uppsala University, Sweden			
		Master Thesis, Courses and grades			
	2012-2018	Doctor of Philosophy, Computer Science – Uppsala University, Sweden			
PERSONAL I	NFORMA'	<u>Ph.D. Thesis</u>			
Citizonshin		Swedich			
Date of Birth		1900-10-20			
Languages		Swedish(Native), English (Fluent)			

Raw Enumeration of Skills/Known Tools, Frameworks

Architecture;

Artificial Intelligence;

Agile software development;

Algorithms and Data Structures;

Backend;

Bash shell, scripting;

Big Data;

C++;

Cloud Computing; Concurrency; Data Mining; Data Modelling; Databases; Distributed computing; Erlang; Express Web Framework; Docker; Git, GitHub; Golang; Graphical User Interfaces; HTML; Java; JavaScript; Jenkins; JSON; Linux; Microservices; MongoDB; Multithreading, Concurrency; MySQL; Network programming; Node.js; NoSQL; Objective C; OOP, Object-Oriented Programming; OpenGL, Parallel, multithreaded programming; Python; Scala; Software Engineering; SQL; SQLite; SSH secure shell;

System Security;

Test-Driven Software Development;

UML;

Unit Testing;

Web Services;

Web Sockets;

XML;