







LARS NIELSEN

 Aalborg Denmark
 +45 27 59 23 27
 lars@embras.dk

 embras.dk
 github.com/loopTools
 gitlab.com/loopTools

Software Engineer and Author

WHO AM I?

I am software developer and author living in northern Denmark. I focus on distributed storage systems and IoT data collection in the area of optimising the storage for both final destination and through out the network. I like to develop simple, powerful, a reusable solutions to the complex problems. This includes researching the problem domain and developing new techniques and technologies if needed.

EXPERIENCE

8/2018 – Present **Author** **Embras**
Writing fantasy novels focused at young adults

8/2018 – 8/2021 **PhD Fellow** **Aarhus University, Department of Engineering, NETX Group**
Expected
I am researching the application of Generalised Deduplication in IoT systems to enable massive scalable data storage for IoT networks and how to reduce the amount of transmitted data.
Distributed Systems / Storage / File Systems / C++ / Linux

4/2019 – 6/2019 **Visiting Researcher** **University of Neuchâtel, Department of Computer Science**
9/2019 – 12/2019
I visited the group of Professor Pascal Felber as part of PhD program. The main focus of the visit was to research if is possible to use Generalised Deduplication in file systems. We confirmed this and started the design and implementation of a FUSE based file system called MinervaFS, which works both as a stand alone file system but can also be used as a layer in other FUSE file systems.

During my second stay at University of Neuchâtel, my research moved from file system to re-searching how generalised deduplication can be used to reduce the energy consumption for network transmission and data storage in a none homogenised network topology.
File systems / C++ / C / Linux

07/2017 – 07/2019 **Assistant Team lead, Software Engineer, Student Software Engineer** **Chocolate Cloud ApS**
full time and part time
I was employed at Chocolate Cloud ApS (CC) first as a student Software Engineer and later as first full time and later part time Software Engineer. During my employment, autumn 2017, I was also given the responsibility of assistant team lead. Throughout my employment I was part of the team that designed and developed SkyFlok, which is a next generation distributed cloud storage solution. My main focus as an Engineer was to ensure secure sharing of files with external collaborators without compromising the content of a customers cloud storage. I also investigated the plausibility for implementing a JavaScript native Random Linear Network Coding and Reed-Solomon library, without loosing efficiency. As a team lead my main focus was to assist the CTO with cross team communication, organising developer days and company meetups, maintain coding styles and guidelines, and to help move the company from a ad-hoc development method to a more well defined agile methodology.
Python / Google App Engine / MariaDB / PostgreSQL / JavaScript /
Confluence / Jira

06/2014 – 06/201 **Student Software Developer** **Steinwurf ApS**
At Steinwurf I worked at extending the capabilities of the companies software libraries for Network Coding and Finite Fields, and creating applications for WiFi network monitoring. During my time at Steinwurf I also implemented the companies new website, moving it from Wordpress to the static page generator Jekyll
/ C++ / C++ / Python / JavaScript / Jekyll

EDUCATION

2016 – 2018 **M.Sc Eng / Cand. Polyt. Software** **Aalborg University, Department of Computer Science**
The master program expands on the topics covered during the bachelor program and includes new topics. I did my master thesis in the group of Distributed and Embedded Systems (DeIS) where I focused improving the performance of Random Linear Network Coding by utilising multi-threaded processing. My thesis was supervised by Associate Professor René R. Hansen Aalborg University an co-supervised by Associated Professor Daniel E. Lucani Aarhus University.

2013 – 2016

B.Sc Software
TBW

Aalborg University, Department of Computer Science

2014

Summer School - Network Coding: From Theory to Practice
Electronic Systems

Aalborg University, Department of

The summer school course focused on the understanding of Error Correcting Codes falling under the Network Coding (NC) family. The course covered the theory behind NC and how to employ it in networks and based on the theory, the student conducted a project where we used Nc. My project was a in-browser P2P Network using webRTC for sharing data.

2011 – 2013

A.P Computer Science

Business Academy Aarhus

I attend the academy profession program in Computer Science which covers software development and implementation. This includes software architecture development and project planing, the later extending to organisation structure understanding.

I specialised in C#, Web-, and Mobile (Android) development. As part of the degree students have to do an internship and a final project. I did both in collaboration with Aarhus University System Development Department.

LANGUAGES

Danish - native
English - fluent

HOBBIES

In my leisure time you will mainly find me outdoors on a hike or in a shelter, or playing some board game with my friends

OPEN SOURCE

I try to contribute to open source software when possible and has as part of my PhD helped release a few open source libraries.