



Kåre Fiedler Christiansen

Nyvangsvej 9 – 8860 Ulstrup – +45 25 66 23 59 – ✉ mail@kaarefc.dk – 🌐 www.kaarefc.dk

CV

Experience

Professional Experience

2021– **Senior Software Engineer**, *Cryptomathic*.

Design and development of secure remote signing solution.

In Cryptomathic I have been working with a team to design and develop our next-generation secure remote signing solution. The solution is a back end solution used by governments and banks across the world, and provides certified cryptographically secure digital signatures for documents and data.

Selected responsibilities:

- **Research and compliance**

Researching best-of-breed technology and standards in the industry, presenting them to management for approval. Documenting compliance of software and processes with requirements of standards.

- **Software architect**

Solution design and architectural design of next-generation software solution. Working with our business architects to provide design of software solutions meeting the functional business requirements. I also represent our team in the cross-company software architect group.

- **Implementation**

Working with a cross-functional team of 8 in an agile process to implement and deliver the proposed solution in Java. Based on REST and servlet technologies in a service oriented architecture, using CI/CD and automated functional tests as part of the development process. Peer reviews and knowledge sharing integrated in the daily workflow for continuous improvement.

- **Second level support**

Providing second level support to customers when first level support need developer assistance for diagnosing and solving problems.

2017–2021 **Head of Section**, *Royal Danish Library*.

Manager of Digital Preservation section.

In 2017 The Royal Danish Library and The State and University Library merged. A new It department across the locations in Aarhus and Copenhagen was established. I was appointed head of section in a section of 12 to 16 employees. I was responsible for the sections employees and economy.

Selected responsibilities:

- **Human Resources**

Training and education, hiring, and, unfortunately, a few layoffs. Ongoing followups on career and well-being. Since 2018 I had employees on both locations, and thus worked with remote leadership.

- **Skill development**

Raising the level of competence in the team, using an active training and hiring policy. In this period I actively raised our level of expertise in our primary development language, Java, but also built up competencies in project management, software architecture, security, and testing.

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- **Planning and executing software projects for the Royal Danish Library**
During my tenure I was co-responsible for simplifying our infrastructure, acquiring and implementing a new unified library system, carrying out tenders of digitization and collection of cultural heritage material, and executing in-house development to support collection digital cultural heritage, such as digitally distributed music and e-books. We also built up infrastructure to support machine learning and AI-supported tasks both internally and in collaboration with the Danish universities.
- **Implement the merger of the State and University Library and The Royal Danish Library in the IT department**
After the merger there was a huge demand to work with the change management. Both the practical harmonization of it infrastructure and the softer human harmonization of cultures and values. In this period we managed to knit together the two teams from the two previous libraries to a tightly knit team with common goals and values. We also implemented several activities to unite and simplify the common infrastructure, using a combination of systems from both of the merged institutions.
- **Handle remote work during the Corona shutdowns**
In March 2021 a shutdown due to the Corona pandemic was implemented in Denmark, and as everyone else we had to switch to remote work from one day to the next. Building on experiences from remote management and working across two locations, our department succeeded in implementing working from home, almost without loss of velocity. I also coordinated supporting better working conditions from home by improving the physical work space and socially coordinated activities.
- **Networking and strategic partnerships**
As a national library, you have to network on a broad level. During my time as head of section, I contributed to building and maintaining strategic alliances with other national libraries in, among others, Norway, France, Austria and the UK. I was also active in more formal networks, like Open Preservation Foundation and the International Internet Preservation Consortium, as well as in networks around our commercial systems, like Preservica User Group. The library has also participated in larger EU projects like SCAPE <https://scape.eu>.

2016 **Technical lead, *The State and University Library.***

Day-to-day management and planning/coordinating.

As technical lead, I continued my work as software architect, but now had the formal responsibility of coordinating the sections work assignments with the library and professional management of 10-12 employees.

Selected responsibilities:

- **Day-to-day coordination and management**
In this period we built up a simplified system for managing portfolio and resources, to better prioritize our work and supported continued followup and reporting on our projects. It was part of my responsibility to initiate and staff the prioritized projects and tasks.
- **Coordinate tasks with the Cultural Heritage department**
Sparring with the Cultural Heritage department about prioritization of IT projects and coordinating the execution.
- **Continued work as Software Architect**

2014–2016 **Special consultant, *The State and University Library.***

Working with software architecture and development in the Digital Preservation department.

As a special consultant i continued my work on existing projects, but got formal responsibility for coordinating and harmonizing the technical project portfolio across the department.

Selected responsibilities:

- **Lead Architect**
As Digital Preservation Lead Architect I was tasked with coordinating acquisitions and in-house development to a coordinated architecture, with the focus of reducing complexity and technical debt, and establishing long lived solutions. This included gaining knowledge of solutions from other similar institutions (national libraries and archives, larger universities). Outcome was, among other, a common architecture, a software architecture guild, and knowledge building activities in the It Department and the library as a whole in decided technologies.

- **New repository**

In this period, I led an analysis to replace our aging DOMS system, aiming to acquire and implement a new system. Working closely with the library professionals, we carried out an extensive analysis uncovering possibilities for with in-house development and commercial off-the-shelf products. This included identifying requirements and researching literature, as well as video conferences and visits to institutions across Europe. The result of this analysis was a recommendation to acquire an off-the-shelf system, and performing an EU tender to acquire the software.

2004–2014 **Software Developer, *The State and University Library, Aarhus.***

Software development in the Web, Digital Resources and Digital Preservation departments.

Selected responsibilities:

- **The Danish Netarchive**

System to collect, preserve, and make available the Danish part of the World Wide Web. My role covered analysis of user needs, design and software architecture, test and software development. The system became the basis of a still functional international Open Source collaboration, where I have co-hosted workshops, and planned and executed a full day tutorial on the ECDL conference in 2008.

Read about the Danish Netarchive on <https://netarchivesuite.org>.

- **Digital Preservation**

Digital Preservation consists of preserving information for times to come. It's an area of active research among e.g. archives and museums. Broadly, you need to ensure, both organizationally and technically, that data isn't lost over time, and that data can still be interpreted. This is complex, both due to the large amounts of data, and the broad variety of ways data is represented. My role in digital preservation has been to build up expert knowledge, working with the professional library sections, as well as architecting a common software infrastructure for digital preservation. I have been project manager on several subprojects to support this infrastructure, some of which are mentioned below.

Read more about the work done on digital preservation on <https://www.kb.dk/politikker-og-strategier/det-kgL-biblioteks-politik-digital-bevaring>

- **DOMS - Digital Object Management System**

A system to register and manage digital collections, including supporting collection, preservation and dissemination. Based on the Open Source product Fedora Commons. My role was main architect, developer and project manager. The system was first used in 2008, and was still in use when I left the library, although under replacement.

- **Bitrepository**

A national collaboration about a system to support preservation of files in multiple copies over long periods (in principle centuries), based on research results and designed to meet all kinds of risks for loss of data, technical as well as human caused. The system was designed in collaboration between three government institutions (The Royal Library, The State and University Library and The National Archives). My role was technical main architect at The State and University Library. The system is used to store 7 Petabytes of cultural heritage collections, distributed across several locations and storage media types in Denmark and abroad.

The bitrepository is described at <https://bitrepository.org>.

- **Digital collection of radio/tv**

The library every day stores broadcast radio and tv. In earlier times, this was received on VHS tapes. These old tapes are also being digitized. This project has in three phases supported digital collection of radio/tv. In phase 1, radio and tv was received over-the-air and through cable tv, and was digitized using standard consumer video encoder cards. In this phase, my role was as software developer. In phase 2, the collection was changed to collect data directly from the cable provider YouSee in born-digital form. Here I was main architect, replacing the system with a SOA-based architecture, where a workflow engine controlled collection and quality control. In phase 3 we changed distributor to Teracom, where the infrastructure was changed to multicast tv signals received over two dedicated lines directly in Aarhus and Copenhagen, and the workflow was updated while the architecture was mostly unchanged. My role was coordinating and responsible for the technical design.

- **Digitization of 32 million newspaper pages**
A large-scale digitization task, carried out by the company Ninestars from India, after an EU tender. My role was the primary technical contact during the tender phase, and architect of the collection and quality control system. It was implemented in a SOA-based architecture of autonomous agents in a loosely coupled network. The system had strong requirements for flexibility and performance, since a lot of pages needed to be processed every day.
- **Mediestream**
Mediestream is a streaming access portal for the library's digital collections, including radio/tv and newspapers described above. The portal gives access to millions of radio- and broadcasts, newspapers, and cinematic commercials. The portal handles streaming access, download and secure access control.
My role in the project was coordinating and implementing the backend systems, as well as coordination with the library professionals about requirements and quality control.
The portal is available at <https://mediestream.dk>.

2004–2004 **Civil service as conscientious objector**, *The State and University Library*.

Served in the Web section as software developer.

Selected responsibilities:

- Development of new homepage for The State and University Library
 - Dynamic contact list
 - Dynamic list of e-journals
 - Dynamic list of databases

1999–2002 **Teaching Assistant**, *Aarhus University*.

Teaching Assistant in courses in computer science. Teaching the courses gave me a much deeper insight into the compendium, and gave me teaching experience.

Courses:

- dIntProg:
 - Introduction to programming in Java
- dADS:
 - Introduction to algorithms and data structures
- dOvs:
 - Compilers. The students needed to write a compiler for Scheme
- dSøgOpt:
 - Searching and optimization. Advanced algorithmic-course

Position of trust

2008–2014 **Staff representative**, *The State and University Library*.

Elected staff representative for between 40 and 50 members of the Danish Association of Masters and PhDs.

Education

2001–2004 **cand.scient. in computer science**, *Aarhus University*.

Thesis

title *Maintaining Connected Components in Dynamic Graphs*

advisor Gudmund Frandsen

description Thesis in theoretic algorithmics. Given a data structure under updates, examine the lower bound of algorithms maintaining knowledge of how nodes are connected.

1997–2000 **BSc in computer science**, *Aarhus University*.

Conferences and Workshops

2022 **GOTO Masterclass - Visualizing Software Architecture with the C4 Model**, Aarhus, Denmark.

Masterclass in the software architect role, and architecture visualization

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- 2021 **Preservica User Group**, Online.
User group conference for the Preservica-system for digital preservation
- 2020 **Preservica User Group**, Online.
User group conference for the Preservica-system for digital preservation
- 2018 **Workshop with Nasjonalbiblioteket in Norway**, Mo i Rana, Norway.
Workshop about joint collaboration Scandinavian solutions for digital collection and preservation
- 2014 **Pasig**, Karlsruhe, Germany.
"Preservation and archiving Special Interest Group" workshop
- 2014 **BibTekKonf**, Lyngby, Denmark.
Danish workshop for it in libraries.
- 2013 **Code4Lib**, Chicago, USA.
International conference for it i libraries.
- 2012 **Code4Lib**, Seattle, USA.
International conference for it i libraries. Gave a lightning talk on Mediestream.
- 2010 **OR**, Madrid, Spain.
Open Repositories conference. Participated with talk on Content Model-driven Architecture.
- 2008 **ECDL**, Aarhus, Denmark.
European Conference on Digital Libraries. Hosted tutorial in introduction to web archiving. Co-hosted a workshop on "Digital Object Repository Systems in Digital Libraries".
- 2007 **OR**, San Antonio, Texas.
Open Repositories conference. Participated with a talk on Enhanced Content Models.
- 2005 **ECDL**, Vienna, Austria.
European Conference on Digital Libraries.

Further Education

- 2023 **Certified Secure Software Lifecycle Professional**, *Study group*, Aarhus.
Weekly one-hour study group for 3 months
- 2021 **Java 8-11 upgrade**, *Logical*, Remote course.
2 modules of 3x3 hours
- 2019 **Remote leadership**, *Pitstop Management*, Aarhus.
2 days
- 2018 **Systemisk ledelse**, *MacMann Berg*, Aarhus.
6 modules of 3 days
- 2013 **SCRUM in practice**, *Trifork*, Aarhus.
- 2011 **It project management**, *Teknologisk Institut*, Aarhus.
- 2010 **Drifti' - internal training on communication, coaching and conflict management**, *Intend*, Aarhus.
3 modules, 5 days total
- 2010 **Introductory course for staff representatives**, *The Danish Association of Masters and PhDs*, Middelfart.
2 modules, i alt 6 days
- 2009 **Negotiation for staff representatives**, *The Danish Association of Masters and PhDs*, Middelfart.
- 2008 **XML and Web Services with Java**, *Teknologisk Institut*, Taastrup.
- 2007 **Sun Certified Java Programmer**, *Teknologisk Institut*, Aarhus.

2005 **Project management**, DIEU, Aarhus.
3 modules, 8 days total

Languages

Danish **Native**
English **Fluent**
German **Basic**

Technical Knowledge

Java Expert
Bash Expert
Linux High
JavaScript Basic
Python Intermediate
General programming skills Broadest experience in languages with a C-like syntax, but high understanding in programming languages in general.
Software architecture High. No formal courses, but I have been working with SOA architectures, loosely coupled web services and autonomous agents for several years.
Information security High. Knowledge of security and cryptographic standards and usage.
Information Management Expert knowledge in XML and supporting technologies (XSLT, XSD, XPath, etc.). Intermediate knowledge in SQL.
Digital preservation Expert knowledge in knowledge about digital preservation, especially concerning audio, video and scanned text.
Metadata og library knowledge Large knowledge base about metadata formats and usage. Intermediate knowledge in library information systems og search technology.

Management Skills

- **Systemic Management**, *My management philosophy is that appreciation and trust is the best way to reach a result, when everyone understands, and works towards, the company's common goals.*
- **It Management**, *With a strong background in IT, I'm well positioned to spar with IT professionals, and find options and challenges in IT support of the company's goals..*
- **Managing Academics**, *Academics are best managed with clear targets and trust, rather than control and interfering with details. I have five years of experience in getting academics to perform..*
- **Remote Management**, *Remote management requires both the right tools and attitude. I have three years of experience of managing employees located in another part of the country..*
- **Managing Economy and Resources**, *Through many years of experience of working in a project oriented government institution, I have a broad experience in framing and controlling projects, to deliver the expected results..*

Personal Qualifications

I would describe myself as committed and pragmatic, with a focus on the broader picture. I think my colleagues would describe me as present and listening - but probably also to sometimes have a somewhat geeky and pedantic humor.

Privately

I am married to Trine and have two girls, Karen and Ellen, who are 12 og 15 years old.
My house is also home to a dog, a cat, and a Linux server I maintain as a hobby.
We live in Ulstrup near forest and river, and I often enjoy the nature with the dog and the family.