Master's Thesis, Content Delivery Network Optimization

About Us

At Ericsson we innovate to empower people, business and society. We envisage a Networked Society that is sustainable, and where everything that can benefit from a connection will have one. Our mobile and fixed networks, TV & Media solutions, telecom and Broadcast/Media services make a real difference to people's lives, and the world we live in. We predict that by 2020 there will be 50 billion connected devices, and of these, more than 15 billion will be video enabled. Ericsson will enable this through its market leading digital TV and compression technology.

The Visual Technology unit at Ericsson Research is driving research, development and standardization of next generation video compression and media delivery technology. We work in teams of highly experienced researchers, software developers, and standardization experts, and everyone has a high degree of individual responsibility and authority.

The Thesis

Content Delivery Networks (CDNs) serve a large fraction of the Internet content (web pages, media files, etc.) today. A CDN is a distributed network where content service providers place copies of their content in a set of nodes at different locations and directs user's clients (browsers and native clients on PCs, smartphones, tablets etc.) to use a nearby node as the server for accessing the content. As Internet traffic is steadily increasing, operating CDNs in a cost efficient way becomes more and more important, and optimization of intra-CDN transmission bandwidth and storage requirements is essential for that. Optimizing CDN operations includes questions such as how many and where to locate the cache nodes, how to place the content based on popularity, CDN infrastructure constraints, and content access patterns, how to define Service Level Agreements between the content service providers and the CDN provider, or how to define an implementation framework.

Your thesis will be based on the work carried out by a team of highly experienced researchers who are already investigating some of these questions. You will contribute to answering the questions by analyzing and implementing creative solutions. Your work will include performing literature studies by reading up relevant documentation, practical implementations, evaluations of new approaches, and writing of a technical report.

Qualifications

We are looking for a bright, open-minded student who has a genuine interest in learning what is likely a new area, and researching new and innovative solutions at the forefront of content delivery. Moreover you have several of the following competences:

- Master's student with most courses completed and good grades
- Good mathematical background
- Very good programming skills in C/C++ and Python
- Excellent communication and team working skills
- Excellent written and spoken English, ability to work as part of an international team
- Strong result orientation and thirst for knowledge

The work is research oriented, so the ability to learn quickly, work independently and identify problems and solutions is necessary. Knowledge of CDNs, optimization theory and other programming languages (e.g. Matlab or Java) is a plus.

Applications should include a short motivation letter and a CV (in English), as well as transcripts of records. Candidates are invited to send their applications as soon as possible.

Apply online.

Contact	Beatriz Grafulla-González, Senior Researcher; email: beatriz.grafulla@ericsson.com
Primary Location	Stockholm, Kista, Sweden
Schedule	6 months, full time