



PhD position in Mining Streaming Data

About the position

The Department of Computer Science has a vacancy for a PhD-position in mining streaming data, in a project funded by DNB (Norway's largest financial services group) and NTNU. The project's focus is on technologies and architectures for dealing with large-scale real-time data processing, with emphasis on solving business challenges within the banking and finance sector.

In the financial sector, a wide range of data sources can be used both to understand customers, as well as the financial market in general. These data sources may contain both structured data (from typical financial services), as well as textual data (from communication with users, news media, or social media). Common for much of the interesting data, is that it is in the form of data streams that needs to be processed in real-time. The topic of this PhD position is effective information analysis (i.e., querying, searching or mining) on such data streams.

The position reports to Head of Department

Main duties and responsibilities

Much of the data relevant for financial services has either an implicit or explicit time dimension, and often also a geographical aspect. The PhD student will develop techniques for effective information analysis on such data, in one of the following areas (depending on interest and background of the candidate):

- Algorithmic: Scalable algorithms for retrieval and mining of spatio-temporal streaming data
- Information retrieval: Searching and mining spatio-temporal-textual streaming data

The main supervisor will be Prof. Kjetil Nørvåg, and the candidate is also expected to work together with other researchers in his group.

Qualification requirements

PhD candidate:

The PhD-position's main objective is to qualify for work in research positions. The qualification requirement is completion of a master's degree or second degree (equivalent to 120 credits) with a strong academic background in [subject area] or equivalent education with a grade of B or better in terms of [NTNU's grading scale](#). Applicants with no letter grades from previous studies must have an equally good academic foundation. Applicants who are unable to meet these criteria may be considered only if they can document that they are particularly suitable candidates for education leading to a PhD degree.

The appointment is to be made in accordance with the regulations in force concerning State Employees and Civil Servants and [national guidelines for appointment as PhD, postdoctor and research assistant](#)

NTNU is committed to following evaluation criteria for research quality according to [The San Francisco Declaration on Research Assessment - DORA](#).

Other qualifications

- A solid knowledge of database systems, algorithms, data mining, or information retrieval is essential, as is a research-oriented master thesis within one of these areas
- Good programming skills
- Good written and oral English language skills

Personal characteristics

- enjoy working in a team-based environment, but also be able to conduct independent activities and thinking
- have a problem-solving attitude
- be highly motivated to publish in top academic conferences and journals top venues in the areas of databases, data mining, and/or information retrieval.

In the evaluation of which candidate is best qualified, emphasis will be placed on education, experience and personal suitability, as well as motivation, in terms of the qualification requirements specified in the advertisement

We offer

- exciting and stimulating tasks in a strong international academic environment
- being part of a team of leading scientists within temporal and spatio-temporal data management
- an open and [inclusive work environment](#) with dedicated colleagues
- favourable terms in the [Norwegian Public Service Pension Fund](#)
- [employee benefits](#)

Salary and conditions

PhD candidates are remunerated in code 1017, and are normally remunerated at gross from NOK 479 600 before tax per year. From the salary, 2 % is deducted as a contribution to the Norwegian Public Service Pension Fund.

The period of employment is 3 years, or 4 years with required duties. Appointment to a PhD position requires admission to the PhD programme in Information Technology (c.f. <https://www.ntnu.edu/phd> and <https://www.ntnu.edu/studies/phit>).

As a PhD candidate, you undertake to participate in an organized PhD programme during the employment period. A condition of appointment is that you are in fact qualified for admission to the PhD programme within three months.

The engagement is to be made in accordance with the regulations in force concerning State Employees and Civil Servants, and the acts relating to Control of the Export of Strategic Goods, Services and Technology. Candidates who by assessment of the application and attachment are seen to conflict with the criterias in the latter law will be prohibited from recruitment to NTNU. After the appointment you must assume that there may be changes in the area of work.

General information

A good work environment is characterized by diversity. We encourage qualified candidates to apply, regardless of their gender, functional capacity or cultural background. Under the Freedom of Information Act (offentleglova), information about the applicant may be made public even if the applicant has requested not to have their name entered on the list of applicants.

The national labour force must reflect the composition of the population to the greatest possible extent, NTNU wants to increase the proportion of women in its scientific posts. Women are encouraged to apply. Furthermore, Trondheim offers great opportunities for education (including international schools) and possibilities to enjoy nature, culture and family life (<http://trondheim.com/>). Having a population of 200 000, Trondheim is a small city by international standards with low crime rates and little pollution. It also has easy access to a beautiful countryside with mountains and a dramatic coastline.

Questions about the position can be directed to Professor Kjetil Nørvåg, e-mail: noervaag@ntnu.no, or Head of the Department Professor John Krogstie, e-mail: john.krogstie@ntnu.no.

About the application:

The application must contain:

- Curriculum vitae (CV) with information about the candidate's prior training, exams, and work experience
- Certified copies of transcripts and diplomas (an English translation of all education documents is required unless the documents are in Norwegian)
- Applicants from universities outside Norway are kindly requested to send a diploma supplement or a similar describes in detail the study and grading system and the rights for further studies associated with the obtained degree
- Statement of Purpose (max. 2 pages) including:
 - A short presentation of the motivation for a PhD study
 - How the applicant sees his/her background suitable
 - The applicant's view of research challenges within the area of the PhD position, from either an algorithmic or an information retrieval point of view
- Names and contact information of at least 2 reference persons
- A copy of the master thesis (in PDF), or, for those who are near to completion of their MSc, an extended abstract combined with a statement of how and when the applicant plans to complete the thesis (1 page)

Incomplete applications will not be considered.

Publications and other academic works that the applicant would like to be considered in the evaluation must accompany the application. Joint works will be considered. If it is difficult to identify the individual applicant's contribution to joint works, the applicant must include a brief description of his or her contribution.

Please submit your application electronically via jobbno.no with your CV, diplomas and certificates. Applicants invited for interview must include certified copies of transcripts and reference letters. Please refer to the application number 2018/ 17288 when applying.

Application deadline: 31.08.2019

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The Norwegian University of Science and Technology (NTNU) creates knowledge for a better world and solutions that can change everyday life.

Department of Computer Science

We are the leading academic IT environment in Norway, and offer a wide range of theoretical and applied IT programmes of study at all levels. Our subject areas include hardware, algorithms, visual computing, AI, databases, software engineering, information systems, learning

technology, HCI, CSCW, IT operations and applied data processing. The Department has groups in both Trondheim and Gjøvik. The [Department of Computer Science](#) is one of seven departments in the [Faculty of Information Technology and Electrical Engineering](#).

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