

Project Proposal – Visualization of Time Series Data

1. Introduction

Our company is currently engaged in data storage, but we have seen the need for a robust application that can visualize time series data. Many of our clients generate more and more time series data with not enough tools available to understand this data. With the increase in popularity of Industrial IoT as well as other applications, the time series database market is set to rapidly expand in the coming years and is set to reach USD 7.76 billion in 2023.

Understanding the data generated by their devices is extremely important for the future success of our customers. You can help us with that. The goal of this project is to develop an application that can visualize time series data. We guarantee you a start-up-like working atmosphere and exciting opportunities to work with latest technologies. In addition to the project goals below, you will also have an opportunity to explore machine learning based ideas you might have.

What you develop with us will not stay in some boardroom as a curiosity but will be presented to our customers and will be actively used by them and us as we develop our efforts in the visualization space.

2. Project goals

- Develop an application that can visualize various types of time series data such as server hardware performance metrics, networking metrics and activity, user activity, application activity and other data such as sensor readings.
- Learn software development on common frameworks such as JSON, NodeJS, ODBC, JDBC and React.
 - Use the selected frameworks and tools to develop the application.
- Learn basic functionalities of common time series databases.
 - Deploy the chosen database.
- Learn different stages of software development with experienced coaches.
 - Use what you have learned in the development of the application.
- Learn how to design a basic UI for the application.
 - Design the UI for the application.
- Learn how to deploy the application in Azure or AWS.
 - Deploy the application.

3. Technologies

- The student team should select tools that they think best suit the task at hand. The team at Alcestor can assist with these choices, but we also want to give the students freedom to choose.
- React; NodeJS; ODBC; JDBC; JSON; and AWS/Azure.
- Time series database that fulfils the right criteria such as OpenTSDB; Azure CosmosDB; Amazon Timestream or other.

4. Requirements for the students

- Experience with some front-end development.
- Ideas for visualizing large amounts of data in an efficient way.
- Interest towards data applications / data science.
- Interest towards machine learning applications a plus.
- Topic difficulty: moderate.

5. Legal Issues

1. The client gets all IPRs to the results.
2. Signing the NDA included in the Aalto's contract template is required.

6. Client

Alcestor team members have coached multiple quality-award winning teams. Alcestor is a recently founded company in the data management space by former Tuxera management. We are builders at heart. With more than 600k EUR revenue in our first year Alcestor has a very strong start. Our customers are some of the biggest organizations in the world from research institutes to media companies. Our current solutions enable such applications as medical research into the human genome on a massive scale.

Alcestor can offer the team a workspace if needed. We will be devoting significant time for this project as it is important for us and our customers. Student team members have a possibility to continue working for one of the fastest growing start-ups in Finland after the project.

Client representative(s)

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7. Additional information

- All documentation and implementation are to be done in the English language.