# Internship Topics - Data Services Department

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<th>Department</th>
<th>Topic</th>
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| Data Services Department  | Quantifying Historical Oil Market Data Uncertainty | General Description  
Uncertainty in historical oil market related data relates to a variety of factors: diverse reporting methodologies, revisions in reporting, reporting units, as well as estimation. Quantifying uncertainty in reported historical oil data for fundamental flows, such as supply, demand, stocks, trade and others would undoubtedly contribute in addressing forecasting. This research would provide statistical uncertainties, from different perspectives taking into consideration, definitions, statistical criteria and limitations.  
Scope  
1. Work on various reports on fundamental oil data flows  
2. Develop statistical methods for addressing and quantifying uncertainty in historical data.  
3. Co-operate with the Statistics Team on the Project.  
Candidate profile  
A successful candidate for this position would should have a quantitative background as well as experience and interest in data and statistical related subjects and the oil market.  
Education/IT skills requirements  
1. Completed at least 3 years of higher university studies preferably in Statistics, Mathematics or related with demonstrated ability in the application of statistical methods.  
2. Computer programming skills: Excel with VBA, R or other statistical software.  
3. Analytical, innovative and perseverant.  
4. Outstanding English skills both speaking and technical writing.  
5. Interest in the oil market and the application of statistical methods. | IP-DSD-1 |
| Data Services Department | A statistical analysis on the effects of changes in economic variables of the historical oil and gas industry time series | General Description  
The study aims primarily to statistically address and measure the effects of economic and financial shocks and variables on the oil and gas industry. Using long-term historical series with various frequencies (monthly, quarterly, yearly) and different related variables enables the researchers to investigate these impacts and associations, for example, the effects of important economic and financial shocks, such as GDP growth changes, COVID-19 pandemic, financial crises, etc., on oil and gas supply or demand from parametric and nonparametric point of view.  
Scope  
1. One important aim of the study is to use Big Data analysis to provide a more granular and detailed view of the changes in oil and gas historical time series during the particular periods of interest and the effects of changes in economic and financial time series on oil and gas industry variables.  
2. The study will require utilization of statistical methods and development of appropriate data visualization approaches on available historical data.  
Candidate profile  
A successful candidate for this position should have expertise and relevant background in statistics and the oil industry.  
Education/IT skills requirements  
1. Completed at least 3 years of higher university studies preferably in Computer Science, Data Science or related.  
2. Computer programming skills: JavaScript, Python, Hadoop, JQuery, CSS, HTML and Excel with VBA.  
3. Interest in Big Data Technics, software design, data mining and a thorough understanding of information architecture.  
4. Interest in the oil market and the application of statistical methods. |
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<th>Data Services Department</th>
<th>OPEC Big Data Project</th>
<th>Scope</th>
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<td>1. Work on the development of the OPEC Big Data Project on the IT side.</td>
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<td>2. Develop data visualization and presentation methods for various data sets.</td>
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<td>3. Implementing statistical analysis.</td>
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<td>4. Co-operate closely with the Statistics Team and Development Team on the Project.</td>
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**Candidate profile**

A successful candidate for this position should have a genuine innovative interest in data and statistical related subject, IT development, data science and the oil market.

**Education/IT skills requirements**

1. Completed at least 3 years of higher university studies preferably in Computer Science, Data Science or related.

2. Computer programming skills: JavaScript, Python, Hadoop, JQuery, CSS, HTML and Excel with VBA.

3. Interest in Big Data Technics, software design, data mining and a thorough understanding of information architecture.

4. Appreciable communication skill.

5. Analytical, innovative and perseverant.

6. Shall have a good presentation and exhibit positive manners and behaviour.

7. Outstanding English skills both speaking and technical writing.

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<th>Data Services Department</th>
<th>OPEC Smart Building: Requirements Specification</th>
<th>Smart Buildings deliver many potential benefits, such as optimized energy consumption and thus a lower carbon footprint. Smart technologies interact with people, systems and external elements around them. These systems learn from experiences and real-time inputs and</th>
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IP-DSD-3

IP-DSD-4
improve with the help of those comfort and safety of building users.

Scope

1. Assess the status quo of the OPEC Premises with regard to:
   a. Technological infrastructure
   b. Age of the facilities
   c. Compatibility with Internet of Things (IoT) and intelligent building technologies

2. Develop vision of OPEC Smart Building.

3. Co-operate closely with the relevant departments to elicitate the requirements.

4. Specify the requirements to convert OPEC premises into a Smart Building.

Candidate profile

A successful candidate for this position should have a genuine innovative interest in the area of smart technologies, Internet of Things (IoT), IT development and electronics.

Education/IT skills requirements

1. Completed at least 3 years of higher university studies preferably in Electronic Engineering, Computer Science, or related studies.

2. IT affinity and Basic programming skills.

3. Interest in programming, data science, electronics, process engineering and a thorough understanding of Internet of Things (IoT) and telecommunication.

4. Appreciable communication skill.

5. Analytical, innovative, flexible and perseverant.

6. Good presentation, exhibit positive manners and behaviour.

7. Proficient level of English both speaking and technical writing.
systems learn from experiences and real-time inputs and improve with the help of those comfort and safety of building users.

Scope

1. Conduct a market survey with regards to available product technologies and their market position.

2. Evaluation of identified solutions with regards to cost, inter-operability, compatibility and sustainability as well as SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis of the solutions.

3. Definition of criteria for preselection of possible candidate solutions.

4. Co-operate closely with the relevant departments on the Project.

Candidate profile

A successful candidate for this position should have a genuine innovative interest in the area of Internet of Things (IoT), IT development, electronics and smart building technologies.

Education/IT skills requirements

1. Completed at least 3 years of higher university studies preferably in Electronic Engineering, Computer Science, or related studies.

2. IT affinity.

3. Interest in programming, data science, electronics, process engineering and a thorough understanding of Internet of Things (IoT) and telecommunication.

4. Appreciable communication skill.

5. Analytical, innovative, flexible and perseverant.

6. Shall have a good presentation and exhibit positive manners and behaviour.

7. Proficient level of English both speaking and technical writing.

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<th>Data Services Department</th>
<th>OPEC Archive Cataloguing Project</th>
<th>Scope</th>
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<td>1. Performing record audits and applying accurate metadata to ensure information security through compliance with the established information classification policy.</td>
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2. Assisting in cataloguing, indexing, describing and organizing information assets.

3. Processing, packaging, re-arranging physical records according to established principles and applying the correct information classification marking.

4. Assisting in the safe disposing of records in line with a records retention schedule to mitigate information security risks.

5. Digitizing records, including the preparation of documents, scanning, performing quality control and assigning metadata.

6. Assisting in other archive-related tasks as necessary.

Candidate Profile

A successful candidate for this position should have a genuine interest in Information Security, Archival Science, Records- and Information Management.

Education/IT skills requirements

1. Completed at least 3 years of higher university studies preferably in Archival Science, Records Management, Library Studies, History, Computer Science, Information Technology, or any other Science related to Information Management.

2. Interest in emerging Information Management Technologies and Improvements.

3. Advanced knowledge of the Microsoft Office Suite, especially Microsoft Excel.

4. Good verbal and written skills, including the ability to describe records accurately and consistently.

5. Integrity, discretion and flexibility.


7. Knowledge of International Archival Standards (e.g. ISAD(G), RiC, DublinCore) and Information Security Standards (e.g. ISO 27001) is an asset.

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<th>Data Services Department</th>
<th>Cataloguing and Bibliographic control in the Integrated Library System (EOS.Web)</th>
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<td>1. Assists in the implementation process of the Integrated Library Management System (EOS. Web)</td>
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<td>2. Corrects bibliographic records in EOS.Web</td>
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<td>IP-DSD-7</td>
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3. Research and update authority records  
4. Conducts manual control of converted bibliographic records  
5. Catalogues in EOS.Web following International Cataloguing and Classification rules  
6. Verifies that bibliographic metadata exported to Visual Library is accurate  
7. Carries out any other tasks assigned by the relevant supervisors as pertain to the internship project as well as the intern’s background and qualifications.

Candidate profile

A successful candidate for this internship should have a genuine interest and knowledge of integrated library systems, cataloguing rules, metadata standards, as well as good technical knowledge of MARC21.

Education/IT Skills Requirements

1. Enrolled in the final year of an University Program or recent graduate in Library and Information Science  
2. Library Management Systems  
3. Professional Cataloguing skills  
4. Good knowledge of MARC 21, AACR2 and the Dewey Decimal Classification  
5. Excellent interpersonal and English communication skills (written and verbal)  
6. Detail oriented  
7. Initiative and integrity.