



**CDS-ES**

CERTIFIED  
DATA SCIENTIST  
EVALUATION SYSTEM

# DATA SCIENCE TALENT REPORT

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**QSS Analytics**



**Data Talent**



**Data Science  
Academy**



# Talent Report

Certified Data Scientist's Evaluation System (CDS-ES) is a joint initiative of the Data Science Academy and Data Talent - assesses the technical and soft skills of professionals in Data Science.

The assessment tool, which will be utilized in Azerbaijan, is aligned with 21st century skills based on the latest updates in data science methods and technologies. Understanding the skills profile of each talent will help us identify their strengths and weaknesses and aid in creating more relevant policies that can support both curriculum and workforce suggestions for versatile talent needs of organizations.

CDS-ES focuses on identifying and examining current data science trends affecting data talents between the academy and industry.

CDS-ES bridges the gap among different schools, industries, government and non-government agencies, communities and other institutions. It aims to establish a sustainable data science talent pipeline of Azerbaijan with the appropriate skills for work.

The CDS-ES report consolidates and creates a skills profile that represents

- Technical Report
- Interpersonal Report

## Technical report

Technical Report contains Transcript and Experience report.

### Transcript

Transcript contains scored report on skills of the candidate on Tableau, SQL, Big Data, SPSS, R, and Python. These scores are calculated on the basis of homeworks, case studies, midterm and final exams during intensive 12 weeks Data Science Bootcamp.

### Experience Report

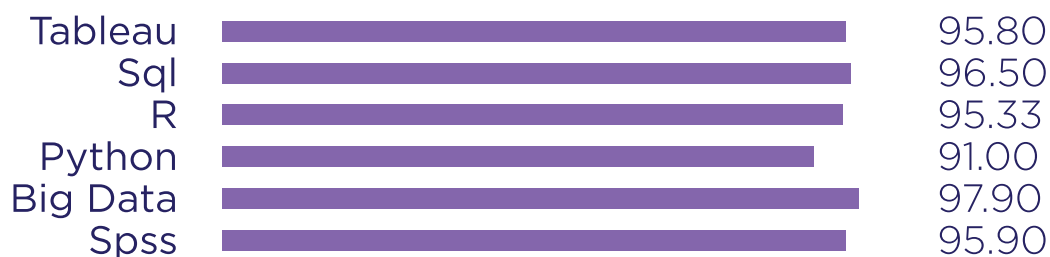
Experience Report contains scores from data cleaning, data Visualization, modelling, and programming capabilities estimated based on real Data Science Capstone Projects. Each score is supplemented with a written description of the candidate's capabilities.

## Interpersonal report

Interpersonal Report assesses Problem Solving, Critical Thinking, Communication and Leadership skills on the basis of Personality Tests and Interviews. Report provides separate score and written description of each capability.

# Technical report

## TRANSCRIPT



## EXPERIENCE SKILLS



**AVERAGE** 93.70

**Note:** Varying degrees of importance of each grade above is multiplied by a predetermined weight to calculate average grade

## Overall summary of technical capabilities

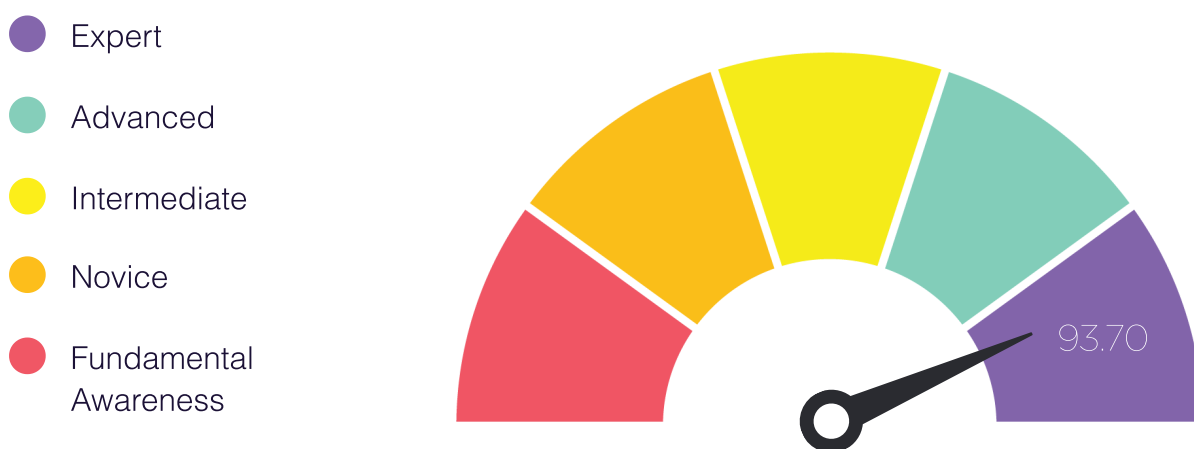


Has substantial experience working on full-life cycle data science as well as data cleaning, visualization, statistical analysis, visualization, predictive modelling, machine learning and deep learning algorithms. inclusive of linear and non-Linear regression, logistic regression, time series analysis using most recent techniques in data science like XGBOOST, Prophet and FastAI. Vasif has experience working with data mining tools such as Python, SPSS, R, Tableau, SQL and Big Data technologies including Spark, Hadoop and Map Reduce. He applies advanced statistical capabilities and delivers statistical models, for example, consumer predictive value, churn, segmentation and profiling, association models, and so forth.

Able to use all best-practice data cleaning techniques and approaches for a variety of data types such as data wrangling, batch processing, data mining, data enhancement, data harmonization and data standardization.

Establishes the purpose and parameters of the data visualization. Provides overall control, to ensure appropriate use of data visualization tools and techniques. Formats and communicates results, using textual, numeric, graphical and other visualization methods appropriate to the target audience.

Able to use R or Python code to test hypotheses, conduct diagnostic analytics tests in order to find significant relationships of features and to predict a variable using statistical and machine learning algorithms. Able to use R or Python code to ensemble models and apply advanced concepts such as bagging, boosting, regularization and hyperparameter tuning.



# Experience Report

## Description of Projects

Bootcamp's culminating Capstone Projects are real-world projects requiring all skills from the entire data science pipeline: preparing, organizing, and transforming data, constructing a model, and evaluating results. Each Capstone project is associated with essential Data Scientist's tools such as R, Python, Tableau, and SPSS.

Capstone Projects are challenging real Data Science tasks provided by various companies and covering different areas of business. All these projects require getting through all steps of data science methodologies such as business understanding, analytical approach to a problem, data preparation and cleaning, visualization, modelling, use of machine learning, deep learning and artificial intelligence methods in Predictive Analytics, evaluating and optimization. Completing the Capstone Projects from scratch shows the ability to make key decisions along the way, justifies architectural decisions, proves understanding the characteristics of different algorithms, frameworks, and technologies and how they impact model performance and scalability. Capstone Projects completely demonstrates that a data scientist has what it takes to lead a complex analysis project from start to finish. Details about each Capstone Project are given below:

# Projects

1

## **Performance analyses project for Telecom Company**

Data analytics professionals receive many ad-hoc requests from marketing and CRM departments about the performance of tariffs for different KPIs and they should create dynamic dashboards using Tableau and other visualization tools conveying all required insights.

2

## **Creating predictive credit risk model for Telecom**

In this project data scientists are required to determine the clients that have probable payment in 30, 60, 90 days and are intended to create statistical performance models. Data scientist should also evaluate the performance of models and deploy the leader model.

3

## **Electricity contract selection project**

In this project data scientist should analyze near 400 000 lines of corporation's electricity consumption data and create models optimizing and reducing expenses.

4

## **The McKinsey & Company's project**

In this project an anonymized dataset provided by one of the most prestigious consulting companies around the world that operate in many countries including Azerbaijan. The participant needs to predict the target value ("y") given all the other features. At the end of this project, participant will be ready for the first data science job as this project encompasses all of the necessary phases a top-notch data scientist in the finance industry passes through to successfully build an in-house prediction model.

# Grades of Experience Skills

The graph below depicts grades of Data Cleaning, Visualization, Predictive Analytics and Programming skills estimated during Bootcamp and evaluated by qualified Data Scientists based on completed projects.

<b>Data Cleaning</b>	Expert	92.50
<b>Data Visualization</b>	Expert	91.00
<b>Modelling</b>	Expert	95.00
<b>Programming</b>	Expert	92.00

## Data Cleaning



Extensive knowledge of best-practice data cleaning techniques and approaches for a variety of data types such as data wrangling, batch processing, data mining, data enhancement, data harmonization and data standardization.

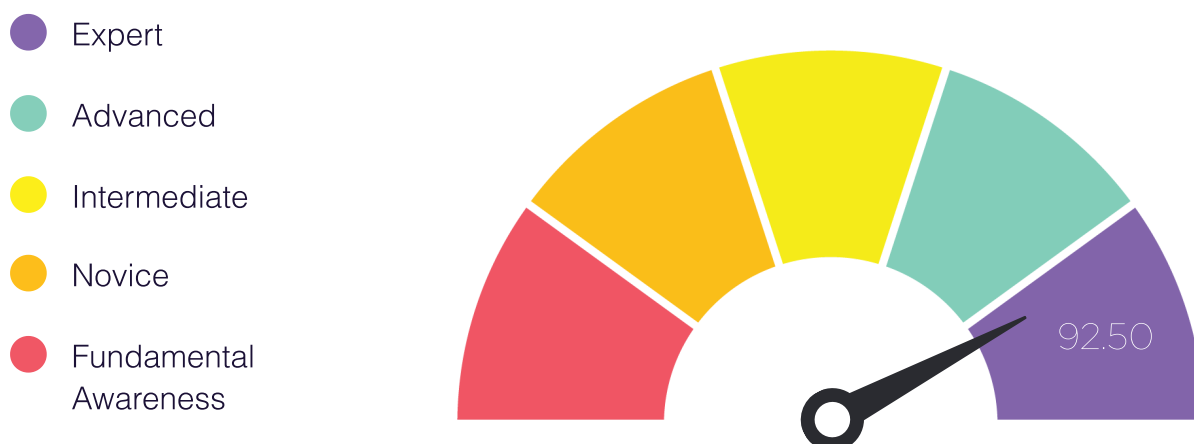
Considerable experience in utilizing these for cleaning complex, large, incomplete data or data with established quality issues. Ability to design and implement data cleaning approaches for complex data and projects.

In-depth knowledge of and experience in using a wide variety of more complex data manipulation and transformation techniques such as transformation, integration, normalization and feature extraction to fuse and reshape complex, multi-source data.

Utilizes in-depth knowledge and experience of organizational problems, data formats and data modelling to lead the team in application of data manipulation techniques for large or complex projects.

Demonstrate the ability to complete a data projects using all skills acquired up to this point: cleaning and transforming data and building a usable dataset. Build a report documenting decisions made on the data. Deliver a presentation sharing process and results.

Demonstrate ability to work with data from multiple data sources: SQL Databases, NoSQL Databases. Demonstrate ability to work with data in databases, csv, xlsx, sav and json files.



## Data Visualization



Ability to present insights to the stakeholders for large or complex projects and gain business validation utilising extensive communications and influencing skills and experience in conveying complex information in easy-to-understand language.

Experience in identifying the best visualisation tool based on detailed knowledge of the data, organisational context and data analytics capability. Significant understanding of a wide variety of audiences and strong ability to tailor communication to their needs.

Demonstrate expertise with Tableau Desktop, Server and Reader tools and familiar with famous Tableau visualization libraries. Demonstrate ability to visualize data for statistical analysis using advanced dashboard and versatile graphical techniques. Demonstrate ability to visualize data for insight sharing with nontechnical users. Demonstrate the ability to turn data insight into business value. Demonstrate the ability to adapt final deliverables and presentations based on the audience.

- Expert
- Advanced
- Intermediate
- Novice
- Fundamental Awareness



## Modelling (Predictive Analytics)



Extensive knowledge of a range of best-practice advanced modelling techniques (for example, text mining, social network analysis, predictive modelling, advanced clustering, association rules etc). Significant experience in selecting and combining modelling techniques that are most likely to deliver maximal accuracy and clarity of insight for a complex organisational objective and context.

Experience in building accurate, valid and efficient modelling solutions using a variety of complex data types (for example, streaming data, raw text data etc). Design and supervise the design of Data Science/Analytics solution for large or complex projects. Chooses the technique optimal for the task (for example, decision trees, advanced regression techniques, random forests etc.) based on detailed knowledge of the data and the technique's constraints, assumptions, interpretability, robustness and areas of application from a wide range of best-practice Data Science/Analytics techniques.

Utilises understanding of organisational context to negotiate performance requirements and implementation of best-practice solutions. Able to construct linear and non-Linear regression, logistic regression, time series analysis models using most recent frameworks and techniques in data science like XGBOOST, CATBoost, LightGBM, Prophet, Neural Prophet, FastAI, Keras and Pytorch. Able to apply advanced hyperparameter tuning and optimize deep learning algorithms using gradient descent methods.

- Expert
- Advanced
- Intermediate
- Novice
- Fundamental Awareness



## Programming



Familiarity with the wide range of data science/analytics commercial and open source software tools, their constraints, advantages, disadvantages, areas of application and mainstream packages relevant to technical stages of data science/analytics projects.

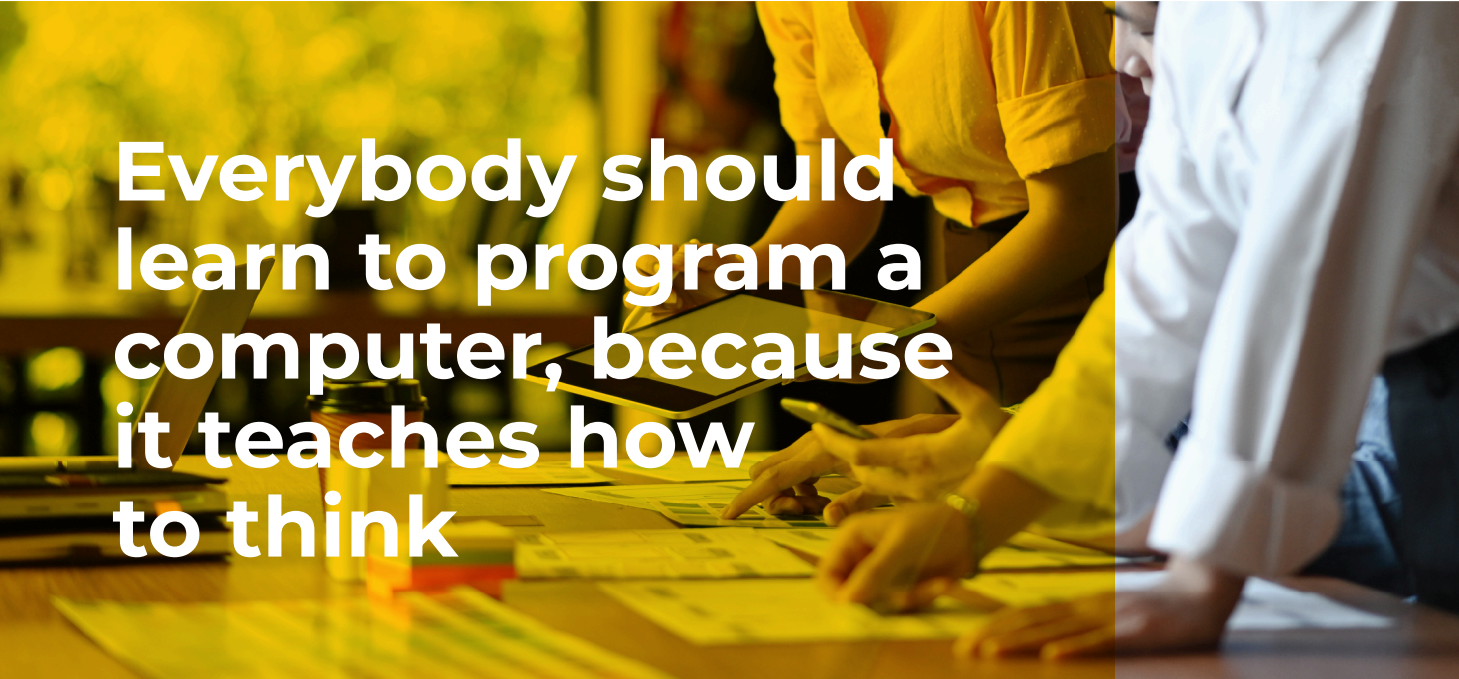
Advanced skills in programming languages used for data science/ analytics (R or Python). Ability to apply these for data acquisition, preprocessing, modelling and model deployment.

Master descriptive statistics Python code calculating mean, median, mode, standard deviation, percentiles and identifying outliers.

Use Python code to test hypothesis, calculate correlations and to predict a continuous or categorical variables using machine learning and deep learning methods.

Able to validate regression assumptions, evaluate performance of algorithms and deploy models.

Familiarity of big data technologies, the specifics of integrating them with existing information systems and using them for data science/analytics solutions.



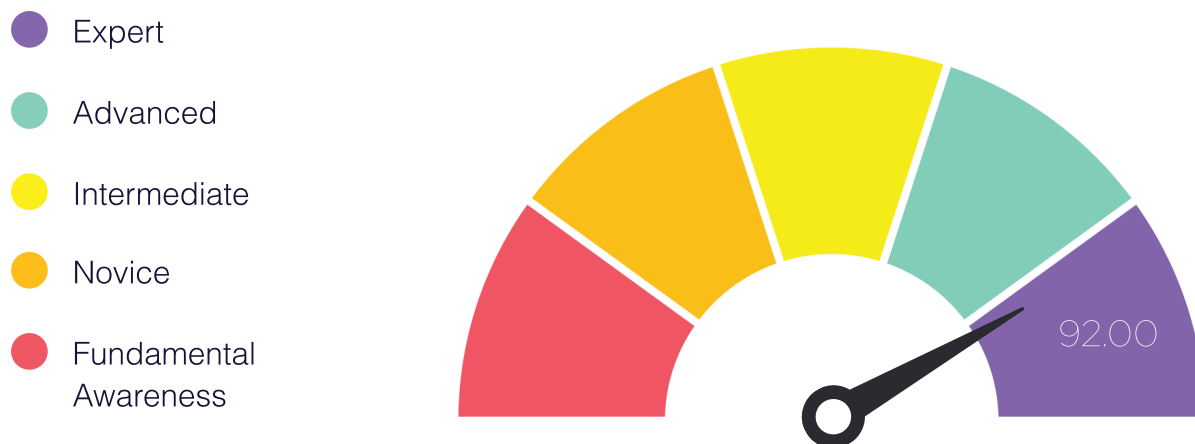
# Everybody should learn to program a computer, because it teaches how to think

Ability to design and lead data science/ analytics projects including creation of a big data environment by setting up and deploying tools, capturing and evaluating results and deploying big data solutions on large scale data sets in the enterprise. Ability to lead a team in identifying a big data problem, selecting the adequate techniques and performing data acquisition, data audit, cleaning, preprocessing, model development & testing and deployment.

Demonstrate knowledge of how each major component in the big data ecosystems works (HDFS, YARN, MapReduce, Spark, Pig, Hive, Flume, Flink, Kafka, etc.). Demonstrate hands-on experience with HDFS, MapReduce, Spark, Pig, Hive.

Ability to design and implement a multi-stage solution that encapsulates systems dealing with both structured and unstructured data. Ability to lead a team in deploying large-scale or multi-stage models or model ensembles utilising extensive knowledge of existing infrastructure, architecture and big data technologies.

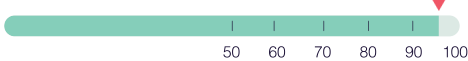
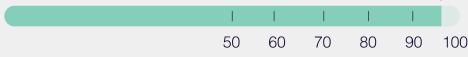
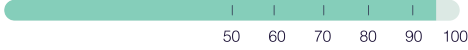
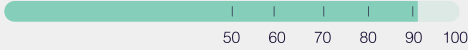
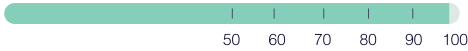
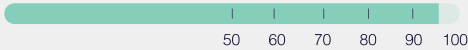
Utilises collaboration skills, in depth knowledge of the problem and organizational context to develop innovative user interfaces and support use of the model.



# Transcript

Transcript of records depicts the overall performance of participant for each specified subject and calculated based on scores gained throughout the entire Bootcamp. It includes overall grades of each subject based on results of 40 homeworks, 30 case studies, a Midterm exam after the sixth week of Bootcamp, and a conclusive Final exam.

The table below contains the subject's name, grade, and visual representation.

SUBJECT	OVERALL	LETTER GRADE	VISUAL GRADE
Tableau	95.80	A	
Sql	96.50	A	
R	95.33	A	
Python	91.00	A	
Big Data	97.90	A	
Spss	95.90	A	

  
Etibar Huseynli  
Chief Executive Officer

  
Aygun Maharramova  
Program Manager

  
Turgut Abdullayev  
Chief Data Scientist

# Soft Skills Report



## Overall summary of interpersonal capabilities



Vasif has an analytical and systematic data approach to issue resolution, interacts with and may influence immediate colleagues.

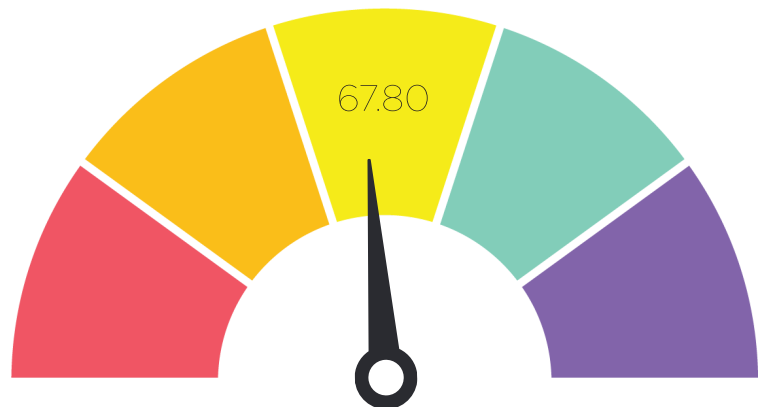
He may investigate, define and resolve complex issues. Understands the relationship between own specialism and wider customer/organizational requirements. Communicates effectively, both formally and informally and responding to complex issues and assignments.

Makes decisions which impact the work of employing organisations, achievement of organisational objectives and financial performance. Analyses requirements and advises on scope and options for continuous operational improvement.

Takes all requirements into account when making proposals. Mentors colleagues. Proactively ensures business problems is appropriately addressed within their area by self and others. Understands and collaborates on the analysis of user/customer needs and represents this in their work.

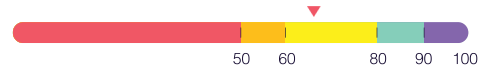
Aware of need to collaborate with team and represent users/customer needs. May have some external contact with customers, suppliers and partners.

- Leader
- Senior
- Intermediate
- Junior
- Unsatisfactory



## Communication • 66.00

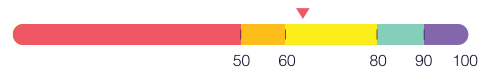
*Intermediate*



Listens willingly and interprets both verbal and nonverbal messages, and offers ideas and applicable insight. Consistently checks for understanding. Thinks through what the messages need to be, and messages it to appropriate audiences in a timely way. Sends messages that are accurate, clear and timely, and uses good judgment regarding who needs to be communicated to, and influenced. Articulates and summarizes the appropriate pros and cons of the issue.

## Problem solving • 64.00

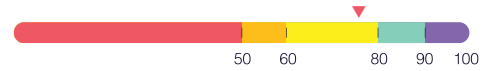
*Intermediate*



Ability to consider an issue from different perspectives and question information validity and assumptions. Ability to work systematically through a problem, use research skills to identify potential solutions from a variety of sources and knowledge of Data Science / Analytics techniques to assist the team to interpret data and analyse business environments. Ability to learn and ask questions about new approaches, perspectives, tools and techniques.

## Critical thinking • 76.00

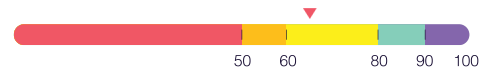
*Intermediate*



Consistently analyzes an issue from different points of view, and integrates data from various sources to identify key root causes. Analyzes data and issues from different perspectives and leverages lessons learned to come up with a practical solution/ recommendation. Interprets the meaning of the data and develops fact-based arguments which influence organizational decisions.

## Leadership • 65.00

*Intermediate*



Shows ability to maintain integrity and "do the right thing" where others may have difficulty or are resistant when there are differences in opinion. Is able to effectively influence others without formal authority.

Mitigates/expedites resolution of conflict in challenging situations that result in building needed levels of consensus and commitment. Takes time to understand and study what has worked and why. Creatively integrates the ideas and perspectives of others to create the best approach while establishing 'buy in' of other team members.

Proactively codifies and documents experience and critical knowledge learned and truly understands and values the impact of one's own behavior on others. Consistently coaches others to maximize their growth while offering both short-term and long term perspectives.

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