

Internship 2022

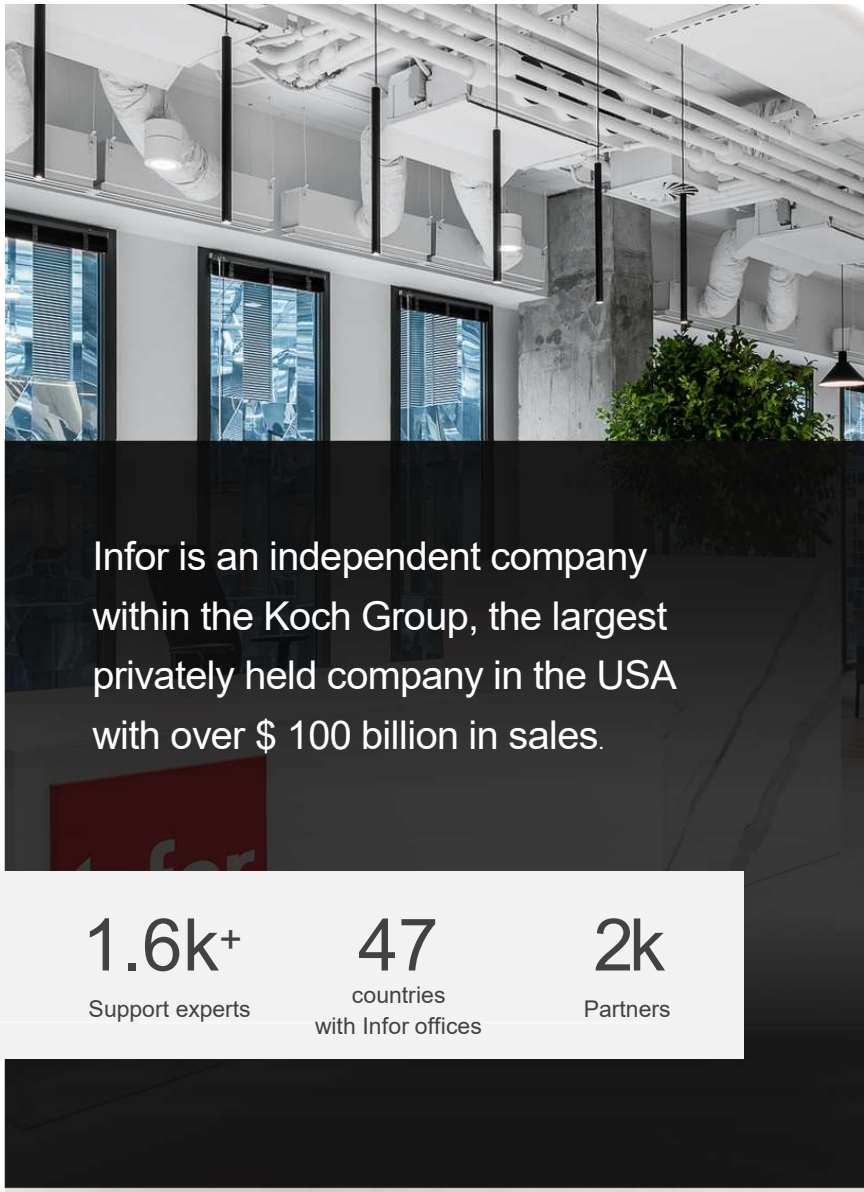
PFE BOOK 2022

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INFOR GLOBAL

A global leader in business cloud software products for companies in industry specific markets.

Infor builds complete industry suites in the cloud and efficiently deploys technology that puts the user experience first, leverages data science and integrates easily into existing systems.



Infor at a glance

65k+	14k+	70m+	177+	17k+	1.6k+	47	2k
Customers	Cloud customers	Cloud users	countries where customers are located	employees	Support experts	countries with Infor offices	Partners

ENTERPRISE SOLUTIONS

Business cloud software specialized by industry

At Infor, we understand that one size fits all software doesn't meet your business requirements. That's why we focus on building software for key verticals that have specialized needs. We are proud to count amongst our customers:



14 of the top 15 food & beverage manufacturers



13 of the top 20 global retailers



17 of top 20 fashion brands



7,000+ Industrial machinery manufacturers



7 of the top 10 global distributer



19 of the top 20 aerospace companies



19 of the top 20 automotive suppliers



9 of the top 10 high tech companies



9 of the 10 largest global hotel brands



More than 5,500 industrial manufacturing customers



More than 1,700 chemical manufacturing customers



17 of the top 20 global banks

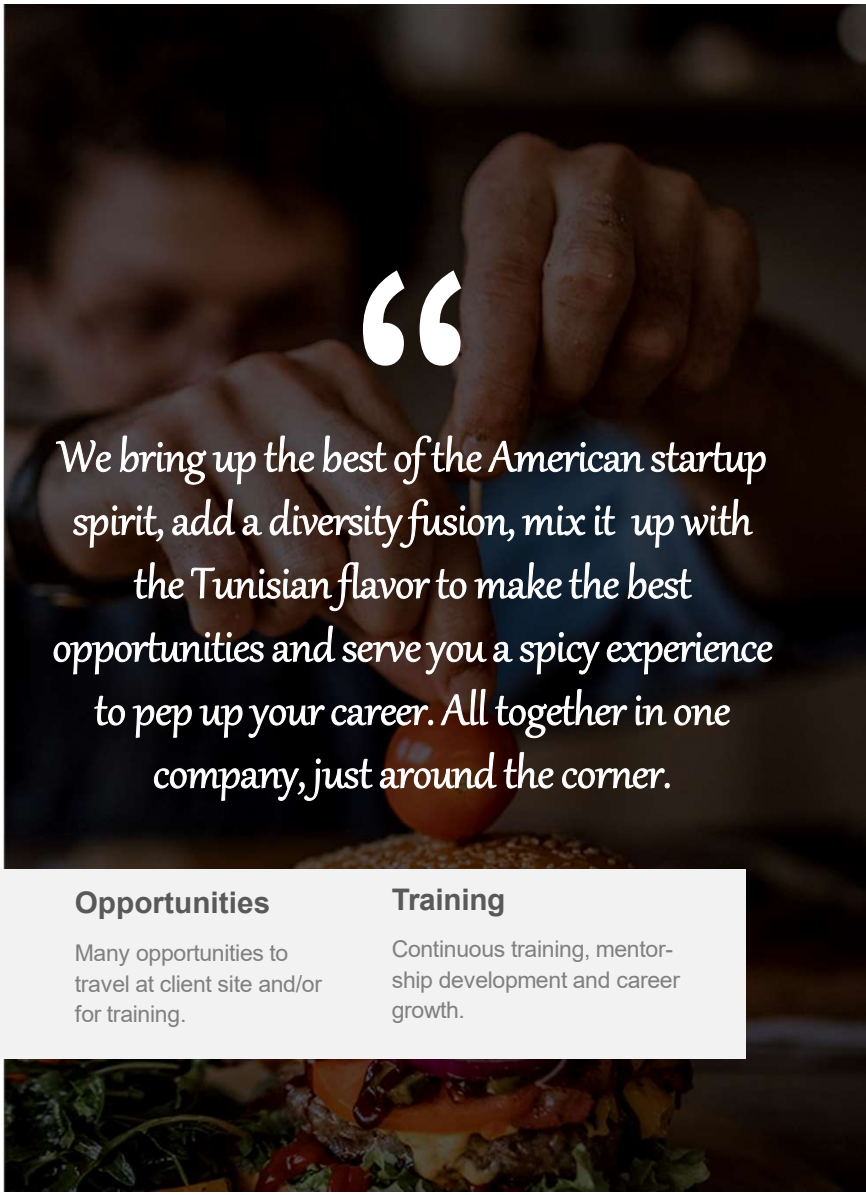
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INFOR TUNISIA

An operational advantage for your sustainable future

Infor Tunisia is a center of excellence and an extension of some of Infor's US and EU team.

- Scientist
- Support
- DevOps
- Full Stack Consultant
- Business consultant
- Project Manager
- QA



Infor Tunisia offers

Rewards

Challenging and interesting projects where results are recognized and rewarded.

Compensations

Competitive compensation package, and exceptional employee benefits.

Service

Work with the world's most talented people to serve international customers.

Opportunities

Many opportunities to travel at client site and/or for training.

Training

Continuous training, mentor-ship development and career growth.

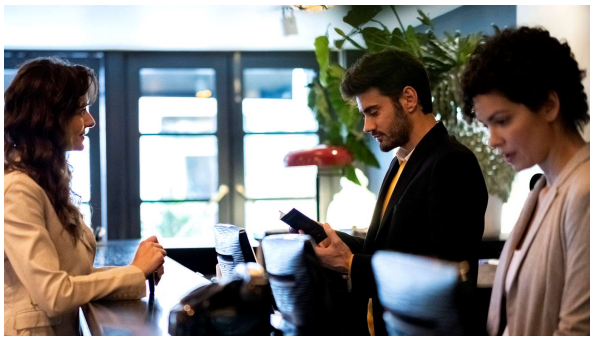
PRESENTATION

Infor Tunisia now has 100+ employees working on many of Infor's suite of products



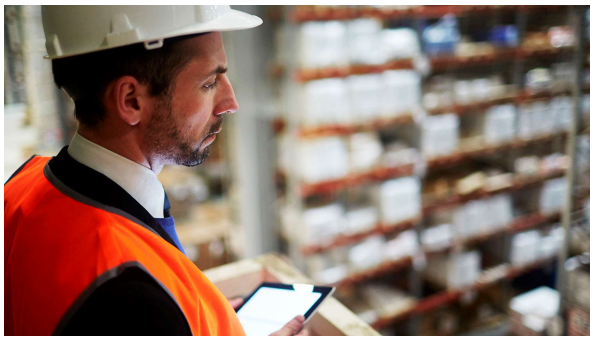
Infor Supply Chain Planning

Deliver intelligent, real-time supply chain orchestration by digitalizing end-to-end supply chain processes, allowing companies to gain real time visibility that empowers data-driven decisions and optimal delivery to customers on time.



Infor Hospitality suite

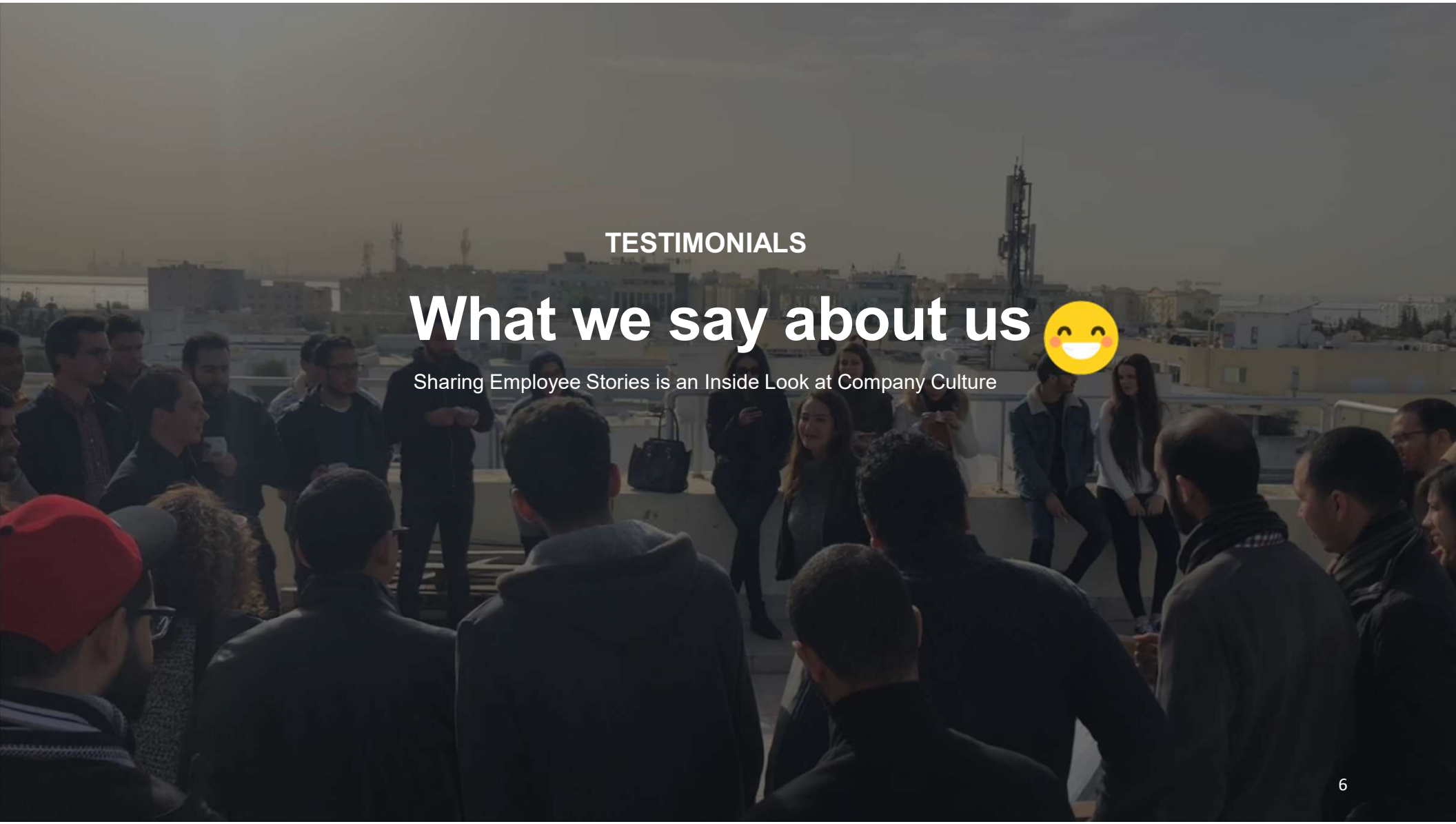
An integrated and dynamic platform for hotels to efficiently and intelligently empower teams to meet the modern guest where they are



Infor GT Nexus

Connecting businesses to the entire supply chain for enhanced supply chain visibility, collaboration, and predictive intelligence.

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TESTIMONIALS

What we say about us

Sharing Employee Stories is an Inside Look at Company Culture

Testimonials

From intern to project manager/director 

“

I joined Infor early in my career as an intern and found myself surrounded, mentored and supervised by amazingly smart people who helped me build my skill set, aroused my curiosity, continuously kept challenging me with new goals and responsibilities and empowered me to take initiatives and progress in my career path. This helped me achieve a tremendous growth on my social, management and technical skills, and I try to do the same today with my team and direct reports.

SAMI, Director, Software Development

“

I have joined Predictix (Later acquired by Infor) in 2010 for my graduation internship. Since then, I have taken many roles from consulting to team and project leadership, and I am now a project manager. I am very grateful to my mentors who are always challenging me to grow professionally and personally. During my journey, I have found my second family, met best friends and had the pleasure to see so many talented people grow with us from students to great engineers and leaders.

MALEK, Project Manager

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Testimonials

Their experiences 

“

I’m a Data Scientist at Infor Hospitality RMS (Revenue Management System). It’s been 3 years since I started working here and It was my first professional experience. During these years, I learnt many skills and enhanced my knowledge in data science and software engineering. At Infor, we work hard to deliver good products and we have fun in a good and encouraging work environment.

RADHOUANE, Scientist

“

Being a part of Infor can be the most reinforcing experience ever!

Ever since I joined Infor as an intern in 2019, I've not ceased to learn and develop on so many levels. This company has a way of bringing up the best in you, as you dive in mature, big-size projects, solving some of the most interesting modern-world problems, across many different industries.

What I love the most here is the people though, Infor is by far the most diverse and exciting workplace you'll ever come across.

SOUHAILA, Consultant

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Testimonials

Every employee has a story to tell 

“

My professional career started with Infor (or at that time Predictix) in 2016 and left on the year of 2018. Leaving the company was to try a different adventure but I always felt like the "mother-ship" was calling. My career plan had always been to become a DevOps engineer and as soon as I found myself ready and Infor has an opening position for a DevOps I jumped at the opportunity. So I came back to rejoin the team this year 2021. The people here are great and everyone was very welcoming which made the comeback very smooth and easy, and I felt like I was back home. Glad to be back, and looking forward for this new chapter within Infor as part of the DevOps Team.

INES, Software Engineer Associate

“

It’s been about 1.5 years working at Infor and it has indeed been a very enriching experience for me. From the day I joined as a graduate intern, I’ve been given the opportunity to learn new skills in the Data Science field under the guidance of people who are willing to share their knowledge. Now, I am proud to be a part of the Infor global family and appreciate the opportunity to realize my full potential in a role that suits my interests and abilities. Our team holds an incredible set of talents, bringing fresh and innovative ideas to customers across the world, in an agile fashion and using cutting edge technologies. In addition to that, the culture is transparent, every employee, irrespective of his position is given a chance to be heard. It's a great place to work for!

CYRINE, Scientist Associate

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Team

Meet our Tunisian team

Friendly environment and plenty of social activities …
+ 100 employees (56% man and 44% Women)
+ 12 social Activities (Game night – Pizza Party – Monthly lunch team – Hiking …)



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PFE Projects 2022

PROJECT 1

Model Prediction Explainability and Error Analysis

Project Description:

Build software tools to help explain which features and feature values are driving the Predictive ETA model predictions and errors

Manager: Kathleen King

Team: Nexus Science

Tools/Technologies: AWS, R, ML Algorithms, Statistics

Duration: 4 - 6 month

Interns: 1-2 interns

Email: kathleen.king@infor.com

Challenges / Mission

Managing a global supply chain is challenging due to the many different organizations that must collaborate. Infor Nexus provides a platform on which these organizations can share information. Our predictive model uses this information to compute the expected time of arrival (ETA), and it updates the ETA as the shipment progresses. We also need to help users understand the business reasons behind ETA predictions and why errors may be higher in some areas of their business.

Questions that we would like to address include:

- Can we identify patterns in the ETA predictions and show how they relate to the model input data?
- Can we understand where the model predictions are smooth or irregular and explain why these instances occur?
- Are there particular classes of outliers that drive disproportionate errors, or other classes of outliers that have little impact on performance?
- How can we systematically present these findings to business users so that they can better manage their supply chain operations?

Notes

The intern will take part in regular Nexus Science team meetings to share ideas, receive feedback, and learn about other data science topics.

Familiarity with R and/or AWS is not required, as long as the student has other programming experience (e.g., Python)

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PROJECT 2

Optimize Machine Learning Code and Evaluate Alternative Models

Project Description:

Optimizing the Predictive ETA code to decrease runtime and/or use less memory usage without sacrificing prediction accuracy

Manager: Kathleen King

Team: Nexus Science

Tools/Technologies: AWS, R, ML Algorithms, Statistics

Duration: 4 - 6 month

Interns: 1 intern

Email: kathleen.king@infor.com

Challenges / Mission

Managing a global supply chain is challenging due to the many different organizations that must collaborate. Infor Nexus provides a platform on which these organizations can share information. Our predictive model uses this information to compute the expected time of arrival (ETA), and it updates the ETA as the shipment progresses. The internship project will focus on improving this predictive model.

The current model includes a wide variety of data structures and algorithms to produce high quality ETA predictions for a large data set (over 100M rows). This project will focus on optimizing the code in a variety of ways, such as:

- Identifying and updating inefficient data structures
- Improving the use of parallelization in the code (to decrease runtime or memory usage)
- Evaluating alternative machine learning algorithms and/or alternative model parameters.

If time allows, the intern may also design and implement automated processes to evaluate the performance of the predictive ETA model.

Notes

The intern will take part in regular Nexus Science team meetings to share ideas, receive feedback, and learn about other data science topics.

Familiarity with R and/or AWS is not required, as long as the student has other programming experience (e.g., Python)

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PROJECT 3

Heuristic Approaches to a Supply Chain Mixed Integer Program

Project Description:

Design and implement a fast solution to the Supply Chain Activity Mapping problem

Manager: Kathleen King

Team: Nexus Science

Tools/Technologies: Python, Optimization (LP, MIP)

Duration: 4 - 6 month

Interns: 1 intern

Email: kathleen.king@infor.com

Challenges / Mission

Managing a global supply chain is challenging due to the many different organizations that must collaborate. Infor Nexus provides a platform on which these organizations can share information. Infor Nexus Control Center allows users to track shipments across their global supply chain and identifies potential late shipments, shortages, and other problems. Our new Resolution Engine recommends solutions to these problems.

In addition to deciding on new actions, the user needs to change the originally planned supply chain orders, shipments, and other activities, but the mapping between the old and new activity sets is nontrivial. The goal of this project is to solve the mapping problem by some combination of the following:

- Design and implement fast heuristic algorithms.
- Formulate the problem as an exact or approximate optimization model, which will run efficiently with realistic data sets.
- Propose changes to the original Resolution Engine model to reduce the complexity of the secondary problem.

Notes

The intern will take part in regular Nexus Science team meetings to share ideas, receive feedback, and learn about other data science topics.

Familiarity with gurobipy, PuLP, or other Python-based optimization modeling libraries is a plus.

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Saas

PROJECT 4

Migrate OpsAudit to a Microservice architecture

Project Description:

Migrate OpsAudit to a Microservice architecture, OpsAudit is a monolithic two tier web application that was built to automate our Audit process, help us to collect and analyse cloud usage, mitigate cloud risks, maximize company gain and avoid the overhead of manual involvement.

Manager: Ghassen Mbarek

Team: SaaS

Technologies: Kubernetes, Docker, Terraform, Bitbucket, AWS, Python, React

Duration: 4 - 6 month

Interns: 1 intern

Email: Ghassen.mbarek@infor.com

Challenges / Mission

•Preparation and Versioning of manifest files for the deployment of applications on the Kubernetes cluster.
•Re-design and develop the UI.
•Build a CI/CD pipeline for the application.
•Automate more audit procedures and integrate them in the application.

Keywords

Kubernetes, Docker, Terraform, Bitbucket, AWS, Python, React, Reverse engineering.

> The goal of this project is to Migrate OpsAudit to a more scalable, easy to maintain and reliable architecture, besides Re-designing the Application frontend which would improve its user experience.

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RMS Science

PROJECT 5

Hotel upsell room types, price Recommendation/optimization

Project Description:

Build software tools to help RMS recommendation capabilities.

Manager: Marwen Nouri

Team: RMS Science

Tools/Technologies: Python, ML Algorithms, Statistics

Duration: 4 - 6 month

Interns: 1 intern

Email: marwen.nouri@infor.com

Challenges / Mission

Revenue management (RM) is the science of managing limited and perishable inventories to maximize revenue. It offers multiple controls perspective using a wide range of techniques like pricing, overbooking or availability adjustments. Revenue management systems have gained significant worldwide adoption in the hotel industry, at least for midscale and higher categories of hotels.

Room type upsell is an important leverage that can help to increase hotel profit and revenue. Usually, the upsells suggestions or recommendations are following a fixed grid or linked to global marketing campaigns. The RM system is having the historical and future data that allows to fine tune upsell recommendations. The idea is to explore the hotels' customers clusters and their willingness to pay levels. This will allow more targeted recommendations based on the group, the date and all other related factors allowing to achieve room types upsells and increase revenue.
Estimating the relationship between price and demand is the first step for an efficient upsell pricing.

Keywords:

Revenue management, RM, pricing, hospitality, machine learning, RL, Clustering, elasticity, optimization

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RMS Science

PROJECT 6

Hospitality data lake, patterns and event detection

Project Description:

Build software to help prepare the hospitality data lake and the tools allowing to extract insights from it.

Manager: Marwen Nouri

Team: RMS Science

Tools/Technologies: Python, ML Algorithms, Statistics

Duration: 4 - 6 month

Interns: 1 intern

Email: marwen.nouri@infor.com

Challenges / Mission

A Hotel Revenue Management system (RMS) is a tool allowing hotels to apply dynamic pricing and inventory tactics in order to increase profit. One of major side benefit of using such tool is most of the time coming from the exposure of the data in a usable/visible to the end user. This allows building meaningful insights, awareness about trends change and help to put in place the most appropriate recommendations in term of pricing and inventory control.

Looking to the data in small context (a hotel) might lead to wrong conclusion. The need of macro and micro understanding is crucial to put thing in context and react with the appropriate action. The goal of this internship is to engineer and analyze internal (hotel booking level, booking pace, rates…) and external (external event feeds, competitors' data, market data…) hotels' data in order to link micro change with macro changes and build a geolocated insights allowing to contextualize trend/market changes.

Keywords:

Revenue Management (RM), Big data, Data analysis, Clustering, BI, Patterns detection.

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PROJECT 7

Smart Data Quality at Scale

Project Description:

Framework for running unit tests on big data and generate quality reports.

Manager: Firas Aloui

Team: IDEAS

Technologies: Scala/Python, Spark, Delta Lake, AWS

Duration: 4 - 6 month

Interns: 1 intern

Email: firas.aloui@infor.com

Challenges / Mission

Motivation behind this project:

- Missing values can lead to failures in production system.
- Changes in the distribution of data can lead to unexpected outputs in downstream systems.
- Aggregations of incorrect data can lead to wrong business decisions.

What you're expected to do:

- Research and benchmark existing data quality frameworks in Scala and Python.
- Implement a Spark-based artifact for running data validation jobs. The application must have the following functionalities:
  - Support unit test functions on data such as primary key, non-null values, etc.
  - Identify and isolate bad records.
  - Generate data quality reports.
- Run the application on big data using the AWS platform.

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PROJECT 8

Predictive UI Development using RAD

Project Description:

Predictive UI Development using RAD

Manager: Firas Aloui

Team: IDEAS

Technologies: Infor OS, Infor Mongoose

Duration: 4 - 6 month

Interns: 1 intern

Mentor: Balaji Chandrasekaran / Abhijit Oka

Email: firas.aloui@infor.com

Challenges / Mission

ML Solutions are not perfect at the time of implementation; thus, they need monitoring and feedback in order to improve quality. To ensure better adoptability we need to efficient user interface to manage predictions generated from ML systems. This UI needs visualization , alerting, updating and committing capabilities for predictions so that it could be utilized by user community.

What you're expected to do:

1. Learn Infor Mongoose Rapid Application Development (RAD) framework
2. Utilizing existing capabilities for Data Lake integrations to create Data Pipelines
3. Research and Build data models and tables in Relational Database (SQL) to optimize the tasks
4. Research and build UI/UX and Graphs with Infor Business Analytics team

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PROJECT 9

Machine Learning Lifecycle Platform

Project Description:

Project for managing ML models lifecycle.

Manager: Firas Aloui

Team: IDEAS

Technologies: Scala/Python, Mlflow, Mleap, Spark, Tensorflow, etc.

Duration: 4 - 6 month

Interns: 1 intern

Email: firas.aloui@infor.com

Challenges / Mission

Motivation behind this project:

- Managing various ML models is a tedious and manual task.
- Reproducibility can be hard to achieve with different ML frameworks.
- Unifying experiments' tracking and deploying ML models.

What you're expected to do:

- Deploy a platform for streamline ML development.
- Run multiple ML models inside the platform:
  - Package different ML models into reproducible runs (Tensorflow, Spark, etc.)
  - Track experiments from the unified API.
  - Deploy the models to batch and/or real-time scoring.

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PROJECT 10

Distributed Mathematical Optimization Project

Project Description:

Distributed Mathematical Optimization Project

Manager: Firas Aloui

Team: IDEAS

Technologies: Python/Scala/Julia/Go, Spark

Duration: 4 - 6 month

Interns: 1 intern

Email: firas.aloui@infor.com

Challenges / Mission

Motivation behind this project:

- There is a significant number of business use cases that we can tackle using mathematical optimization. The goal is to have a platform that allows us to write and solve constrained optimization problems for which we can formulate a set of decision variables, an objective function and a set of constraints.

What you're expected to do:

- Research existing mathematical optimization modeling frameworks and how we can integrate them with Apache Spark
- Deploy a platform for developing and solving mathematical optimization problems.

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PROJECT 11

Machine Learning Data Visualization

Project Description:

Visualization is the key to tell a powerful data story. It is applied across multiple domains to support users in making intelligent data driven decisions based on the outputs of Machine Learning models. This business intelligence centered project is intended to move the data through the cycle from organizing all the way into deriving meaning for business decision and action.

Manager: Hassene Benammou

Team: IDeAS (Infor Decision Analytics & Science)

Technologies: Infor Birst cloud business intelligence and analytics platform, SQL queries creation base

Duration: 4 - 6 month

Interns: 1 intern

Email: hassene.benammou@infor.com

Challenges / Mission

Use cloud business intelligence and analytics platform to move the data throughout all cycles from gathering and organization into modeling, designing, analyzing, augmenting with Machine Learning models' outputs, creating visuals, identifying KPIs and building powerful user role driven dashboards.

The final output of the internship would be a set of dashboards designed with the key personas in mind outlined to represent:

- Descriptive analytics and data insights based on historical & current data
- Predictive and/or prescriptive analytics to creatively represent the outputs of ML models
- Benefit case to effectively showcase accuracy and monetize value
- Workflow to trigger user actions from notifications into business decisions

The challenge of this project would be in making sure that data model is generic and configurable to be reusable and suitable for multiple data sets within the same use case.

> "The mission for this project would be to unleash the power of data for making intelligent business decisions / actions and to rely on visualization for telling a powerful data story.

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PROJECT 12

Smart IOT Application

Project Description:
Highly Visual, Cloud Based, Alert Driven IOT application allowing to visualize and interact with sensors in real-time

Manager: Hassene Benammou
Team: IDeAS (Infor Decision Analytics & Science)
Technologies: AWS, Kafka, Python
Duration: 4 - 6 month
Interns: 1 intern
Email: hassene.benammou@infor.com

Challenges / Mission

Build a highly visual, cloud based, alert driven IOT application allowing to visualize and interact with sensors in real-time

- Highly Visual: the application needs to allow the user to understand the state of his assets through graphs and rapidly act if necessary
- Cloud Based: the application needs to be built with cloud capabilities in mind and needs to take advantage of AWS services.
- Alert Driven: the application workflow needs to be driven by configurable alerts based on rules.
- Real-Time: the application needs to be able to interact with a real-time stream of data as input.

The final output of the internship would be an integrated dashboard designed with the key personas in mind outlined to represent:

- Descriptive analytics and data insights based on historical & current sensors data
- Predictive and/or prescriptive analytics to creatively represent the outputs of Machine Learning models
- Configurable alerts based on rules allowing to react fast and take actions

Challenges:

- Make sure the application is performant and scalable with real-time streaming data
- Make sure the data model and rules created are generic and configurable to be reusable with different data sets.

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PROJECT 13

Computational Models for predicting Quality in Process Industry

Project Description:
Build computational model to predict product quality in the process industry using soft sensors

Manager: Inderjeet Singh/Fatma Abdelkefi

Team: IDeAS (Infor Decision Analytics & Science)

Technologies: Python, Scikit learn, Py torch

Duration: 4 - 6 month

Interns: 1 intern

Email: inderjeet.singh@infor.com
fatma.abdelkefi@infor.com

Challenges / Mission

Motivation

Generally, we check a pizza 2 to 3 times during cooking but even so there are times when the pizza is burnt, why is this? A similar situation arises in industrial settings for precisely the same reason; it is expensive to sample the process continuously. As a proxy for the state of the process we must rely on a model to give an estimate of the measurement we wish to make (for example we might consider the starting temperature of the oven and the amount of energy that has been fed into the system to make an estimate about the state of the object). Because this model is only intermittently measuring the actual state it is known as a soft sensor. Training soft sensor models introduces interesting peculiarities not usually seen in machine learning. In addition, we sometimes have control over the timing of the 'expensive' sample and this is the focus of this project.

Mission

The aim here is to build a model which estimates not only the state of the process but also at what time we should sample that process to avoid it going beyond certain limits. The data set is taken from a chemical process in which a catalyst is used to oxidize a gas.

Key Words

Machine learning, modelling, statistical modelling, industrial control

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Decision Analytics & Science

PROJECT 14

Stockout Prediction and Prevention for Location Enabled Mobile Assets

Project Description:
Stockout Prediction and Prevention for Location Enabled Mobile Assets

Manager: Inderjeet Singh/Fatma Abdelkefi

Team: IDeAS (Infor Decision Analytics & Science)

Technologies: Python, SQL

Duration: 4 - 6 month

Interns: 1 intern

Email: inderjeet.singh@infor.com
fatma.abdelkefi@infor.com

Challenges / Mission

Motivation

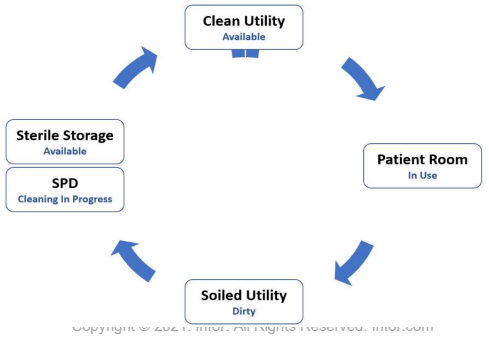
Most hospitals utilize thousands of mobile durable medical equipment assets to provide care for patients. These equipment items follow a cyclical process of being used for a patient, then taken to a location where they are cleaned and sterilized before they are transported back to a clinical storage location where they are available for use on the next patient. Figure 1 below shows a simplified activity cycle of an equipment.

Mission

The objective of this internship is to be able to predict and prevent the stockout of an equipment. A first step would be to predict when a certain type of equipment would be unavailable (in use, dirty, in-cleaning etc.) and alarm the user to restock or try preventing it by his own intuition. A natural extension would be to optimized equipment placement (allocation) and assignment to optimize the whole cycle of usage of each equipment and prevent the stockout from happening.

Key Words

Machine Learning, Mobile Assets, Location Based Intelligence, Optimization



Infor 2021

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Decision Analytics & Science

PROJECT 15

Automated Feature Selection for Clustering

Project Description:
Implement a feature selection technique for clustering

Manager: Inderjeet Singh/Fatma Abdelkefi

Team: IDeAS (Infor Decision Analytics & Science)

Technologies: Python, Infor Coleman

Duration: 4 - 6 month

Interns: 1 intern

Email: inderjeet.singh@infor.com
fatma.abdelkefi@infor.com

Challenges / Mission

Motivation

Feature selection helps to address feature redundancy, promote comprehensibility, and find structures hidden in high-dimensional data. Machine learning models become more scalable, reliable, and accurate by selecting meaningful attributes using automated feature selection techniques. However, most available feature selection techniques are only applicable to supervised learning problems, and little attention has been paid to unsupervised learning tasks like clustering.

Mission

The objective of this internship is to implement a feature selection technique for clustering using multivariate categorical attributes initially and evaluate extensions for a mixture of categorical and numeric variables. We consider the evaluation of two different approaches as part of this project. The first method uses a Bayesian approach where both clustering and variable selection are carried out simultaneously using a Latent Class Analysis (LCA). The second method considers a variable selection technique based on stepwise model selection.

Key Words

Feature selection, Clustering, Latent Class Analysis (LCA), Categorical Data

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Decision Analytics & Science

PROJECT 16

Automated Model Selection for Supervised ML

Project Description:
Implement fully automated method for searching the appropriate model specifications from an infinite hypothesis space.

Manager: Inderjeet Singh/Fatma Abdelkefi
Team: IDeAS (Infor Decision Analytics & Science)
Technologies: Python, PySpark, Infor Coleman
Duration: 4 - 6 month
Interns: 1 intern
Email: inderjeet.singh@infor.com
fatma.abdelkefi@infor.com

Challenges / Mission

Motivation

Feature-based algorithms perform differently with a performance significantly dependent on the selected features and training settings. The selection of the right sets of features and parameters is an NP-hard problem and can be very time consuming.

Mission

The purpose of this project is to provide a fully automated method for searching the appropriate model specifications from an infinite hypothesis space. Previous works on this direction highlighted the efficiency of optimization algorithms in tuning hyperparameters for a wide range of sophisticated ML models but never combined with the feature selection processes. Ideally, the solution will be integrated with the company's own ML tools. For evaluation purposes, we plan to use a combination of open source and real-life datasets.

Key Words

Feature selection, Hyperparameters Tuning, Optimization

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Decision Analytics & Science

PROJECT 17

Explainable AI

Project Description:
Implement Explainable AI tool for Infor ML models

Manager: Firas Aloui/Fatma Abdelkefi

Team: IDeAS (Infor Decision Analytics & Science)

Technologies: Python, Infor Coleman, PySpark, and Scala

Duration: 4 - 6 month

Interns: 1 intern

Email: firas.aloui@infor.com
fatma.abdelkefi@infor.com

Challenges / Mission

Motivation

With the advancements in machine learning (ML) algorithms, users are challenged to comprehend and retrace how the algorithm arrived at the result. As a result, advanced ML algorithms are becoming “black-boxes” that are hard to interpret even for the engineers and scientists who created these algorithms. Recently a lot of research has been done to make such black-box models interpretable for business use cases across industries to promote end user trust and productive use of AI.

Mission

The goal of this internship is to explore the state-of-the-art algorithms that support interpretability and explainability of ML Models. The second goal is to build a solution using Explainable AI that can be applied to widely used ML algorithms for supervised learning such as XGboost, DeepAR, etc.

Key Words

Explainable AI, LIME, SHAP, Model Interpretability, Black box models

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Site Reliability Engineering,
Support operations

Project Description:

SRE metrics dashboard that reports system availability and reliability metrics, alerts on anomalies and forecast failures and capacity issues

Manager: Lamice Skhiri

Team: SRE

Technologies: AWS, Python, Java, SQL, Monocle, React JS

Duration: 4 - 6 month

Interns: 1 intern

Email: Lamice.Skhiri@infor.com

PROJECT 18

SRE Metrics and Forecasting Dashboard

Challenges / Mission

Motivation behind this project:

- Lack of resources or unoptimized code can lead to failures in production system.
- Changes in the system usages (number of users or data structure) can lead to system failure.
- Lack of visibility to system usage increase prevents proactive approaches to avoid outages.

What you're expected to do:

- Built a dashboard that integrates with and pulls data from all production servers and monitoring systems
- Report traffic, error rate, saturation and latency metrics for all ST customers and a test tenant on the MT Farm for every region.
- Report performance against service level objectives (SLO)
- Provide trends overtime
- Leverage ML/AI to forecast issues (size, performance, etc ...)
- Run the application on big data using the AWS platform.

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Optimization Science

PROJECT 19

Building a bot to automate the process of implementing ML techniques in Forecasting

Project Description:

Create a bot to automate the process of implementing Machine Learning techniques in Forecasting such as exploratory data analysis (EDA) and tuning the model

Manager: Melek Charfi

Team: Optimization Science

Technologies: Python or C++

Duration: 4 - 6 month

Interns: 1 intern

Email: melek.charfi@infor.com

Challenges / Mission

Machine Learning has been a very popular topic in many fields. Researchers are looking for ways to take advantage of sophisticated methods offered by ML. Many implementations end up ignoring the implications of these complex algorithm while going after potential benefits. ML is widely used in Forecasting and it provides benefits but it also requires longer implementation periods and more experienced resources.

Accordingly, automating the process of implementing ML techniques in Forecasting is critical for success. Part of this process is exploratory data analysis and the other part is the tuning of the model. These determine what goes into the model and what parameters are used to get good results out of the model. We would like to explore ways to automate this process and create self sufficient Machine Learning models for Forecasting.

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How to apply

Send an email to the corresponding internship manager specifying the project topic/ID

Keep in touch :)

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