



# NORTHEASTERN UNIVERSITY

**ALY 6060 Module 5 Assignment**  
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## **PART 1**

# **Leveraging AutoML for Enhanced Business Outcomes: A Case Study on Cisco CX**

### **Introduction**

In the dynamic landscape of enterprise networking, the integration of cutting-edge technologies is crucial for ensuring seamless operations. Cisco, boasting over 35 years of networking expertise, has consistently led the way in innovation. One of its transformative offerings, Cisco AI Network Analytics, now a cornerstone of Cisco DNA Center, has proven instrumental in delivering enhanced business outcomes. This paper not only expands upon the previous discourse but also integrates insights from the IT team at REWE Group in Austria, providing a comprehensive overview of how AutoML (Automated Machine Learning) is reshaping network management and fostering business agility.

### **The Evolution of Networking Challenges**

As networks expand in scale and complexity, IT teams face escalating challenges. The proliferation of connected devices, reliance on wireless technology, and the prevalence of cloud-based applications necessitate a paradigm shift in network management. Intent-based networking has emerged as a solution, automating operations to dynamically align with business priorities. Cisco's DNA Assurance, complemented by AI Network Analytics, tackles these challenges by offering personalized insights, predictive analytics, and proactive exploration capabilities.

### **Business Value: A Real-World Perspective**

The IT team at REWE Group provides a practical perspective on the impact of AI/ML technology within Cisco DNA Center. Despite their engineering background, their focus remains on the tangible business value derived from these innovations. Hans Vasters, Senior Network Architect, highlights a significant reduction in ticket resolution time. This time-saving directly translates to the team's ability to concentrate on strategic projects vital to the core business. In an era where IT shoulders critical tasks like database migrations, transactional blockchain, AI manufacturing integrations, and customer-facing mobile apps, the value of time resources cannot be overstated.

Florian Schrofl, Head of Basic Infrastructure and Services at REWE, reinforces this sentiment by recognizing AI/ML as a means to efficiently handle future workloads. He emphasizes the role of this technology in reducing the workload on his team, allowing them to navigate the complexities of modern enterprise networks with agility. Schrofl's insightful perspective hints at the broader applications of AI/ML beyond network management, showcasing its potential in streamlining business workflows.

### **Cisco DNA Center with AI Network Analytics: An Efficiency Enabler**

The integration of Cisco AI Network Analytics into Cisco DNA Center, initiated in June 2019, marked a significant leap in network management capabilities. As an early adopter, REWE Group experienced tangible business benefits within a few months of implementation. This rapid realization

underscores the efficiency gains enabled by this technology, making every part of the network more responsive and agile.

The Controller-led architecture of Cisco DNA Center plays a pivotal role in enhancing the responsiveness and intelligence of the network. The tight integration with network devices empowers the AI/ML technology to deliver more personalized insights through Cisco DNA Assurance. Assurance, automation, and security collaboratively operate within Cisco DNA Center, forming a robust network controller. This not only streamlines network management but also establishes a foundation for future advancements in enterprise networking.

### **Amplifying Business Outcomes with AutoML**

The integration of AutoML technologies with Cisco AI Network Analytics further amplifies the potential for businesses to derive actionable insights from their networks. AutoML, an automated machine learning approach, empowers organizations to adapt to the unique characteristics of their networks. It surpasses traditional machine learning models, providing flexibility and adaptability to changing network conditions.

AutoML ensures that the AI-driven analytics engine continually learns and evolves based on real-time telemetry and global data sets. This adaptability translates into highly personalized network baselines, enabling accurate anomaly detection and predictive analytics. By leveraging AutoML, Cisco AI Network Analytics moves beyond static analytics models, providing dynamic decision trees that adapt to the specific trends, services, and application metrics of individual networks.

### **Future Directions: Unleashing the Power of AutoML**

Looking ahead, the integration of AutoML in Cisco AI Network Analytics opens avenues for more sophisticated applications. The accelerated remediation capabilities, already evident in the machine reasoning engine, can evolve further with AutoML. AutoML's ability to handle diverse and large datasets positions it as a key enabler for tackling complex network issues and predicting outcomes with a high degree of accuracy.

As organizations continue to embrace intent-based networking and digital transformation, the role of AutoML in network analytics becomes paramount. The collaboration between humans and machine intelligence, exemplified by the IT team at REWE Group, foretells enhanced productivity, reduced troubleshooting efforts, and a heightened focus on strategic initiatives.

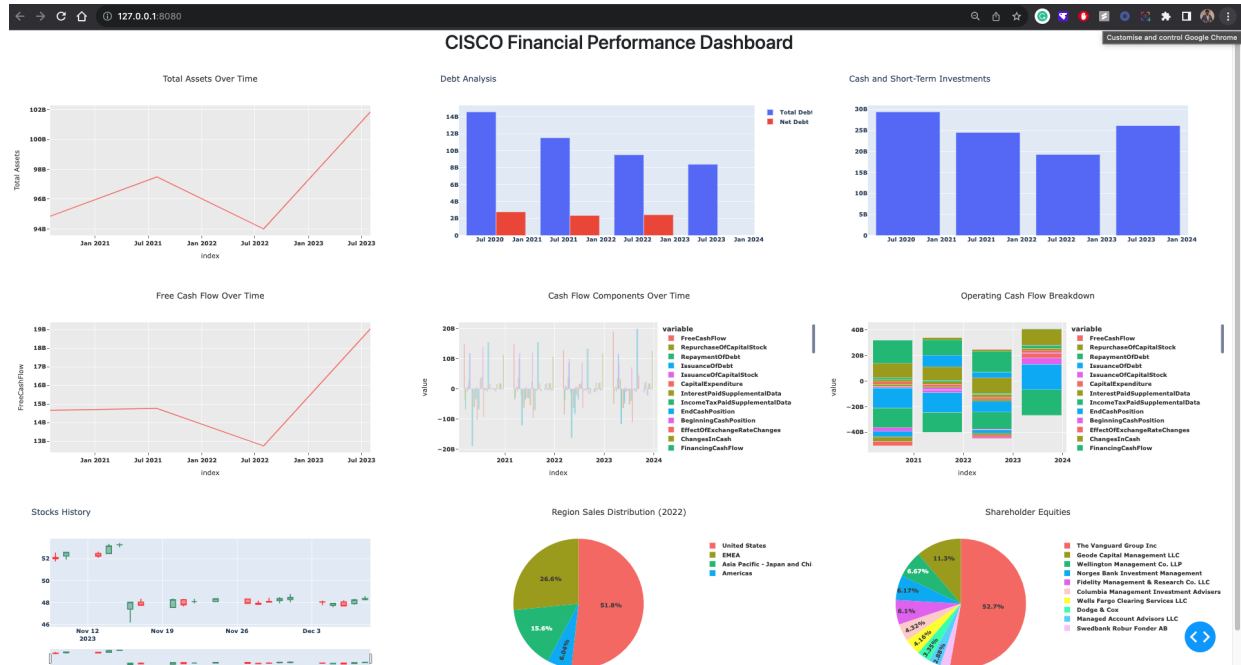
### **Conclusion**

In conclusion, the integration of AutoML in Cisco AI Network Analytics signifies a paradigm shift in enterprise network management. The insights from the IT team at REWE Group underscore the tangible business value derived from this technology. Cisco's commitment to making AI Network Analytics a standard part of Cisco DNA Center, coupled with the transformative potential of AutoML, positions Cisco CX as a leader in driving enhanced business outcomes through advanced network analytics. As networks evolve, the synergy between human expertise and machine intelligence will shape the future of intent-based networking, ushering in an era of unparalleled efficiency and agility.

## PART 2

### CISCO FINANCIAL PERFORMANCE DASHBOARD

**NOTE:** This is attached for references, please find a dashboard PDF attached separately.



This Dashboard was created using Dash library in python and Plotly. Data cleaning and processing was done using pandas.

### Conclusion:

The integration of AutoML into Cisco AI Network Analytics has proven to be a game-changer for Cisco CX and its clients, as exemplified by the experiences of REWE Group. The provided dashboards, based on Cisco's financial data, reveal positive trends in key areas. The enhanced network management capabilities, driven by AutoML, have translated into tangible benefits, such as significant reductions in ticket resolution time for the IT team at REWE. This time efficiency allows the team to focus on strategic projects critical to the core business, reflecting the real-world impact on business outcomes.

The financial dashboards, particularly those showcasing cash flow components and major holders, provide insights into Cisco's financial health. The dashboards contribute to a comprehensive understanding of Cisco's performance and financial stability. The synergy between Cisco's commitment to AI Network Analytics and the transformative potential of AutoML positions Cisco CX as a leader in driving efficiency, agility, and enhanced business outcomes in the evolving landscape of intent-based networking.

**References:**

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