ASU

Graduate Project Portfolio

By

Sarim Zubair

Submitted in fulfilment of the requirements for the degree of

Master of Science in Technology with a concentration in Aviation Management and Human Factors

Arizona State University

Period of Study: January 2021 -- December 2022

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<p style="text-align:center">Resume</p>

SARIM ZUBAIR

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EDUCATION

Arizona State University, Fulton Schools of Engineering   **Tempe, AZ**
Candidate for Master of Science in Technology, December 2022
Cumulative GPA: 4.00/4.00
Arizona State University, Fulton Schools of Engineering   **Tempe, AZ**
Bachelor of Science in Aeronautical Management Technology, Summa Cum Laude, December 2021
Cumulative GPA: 3.93/4.00

TECHNICAL SKILLS

Programming Languages: Python, R, SQL, HTML5, Java, JavaScript, C, C++
Data Science: Data Cleaning, Data Mining, Statistical Analysis, Machine Learning, Bayesian Statistics, Tableau, MS Excel, Jupyter Notebooks (Python, Pandas, NumPy, Matplotlib, Scikit-Learn, TensorFlow, Keras), Web Scraping, RStudio, SQLite, SAS, AWS Cloud Practitioner
Web Development: HTML5, CSS3, Bootstrap, JavaScript, React, Java, Spring, SQL
Project Management: Microsoft Office, Salesforce, Kanban, Scrum, Facilitation

PROFESSIONAL EXPERIENCE

Arizona State University Housing, Community Assistant, October 2019-Present   **Tempe, AZ**
- Guide 50+ first-year engineering students to navigate academic and personal support resources on campus.
- Coordinate student engagement events focused on academic success, cultural diversity, and wellness.
- Enforced housing and university code of conduct policies and procedures to ensure a safe residential environment.

Tech Talent South, Associate Consultant, July 2022-Present   **Remote**
- Completed an immersive apprenticeship focused on data science and full stack web development.
- Build SQL databases and validate their stability and efficiency for integration with other web applications and data visualization.
- Aggregate unstructured data from 20+ sources on MySQL database to build predictive models using various machine learning tools (e.g., Matplotlib, Scikit Learn, RStudio) on Iris Datasets.
- Design innovative user interfaces and test web applications using HTML5, CSS3, Bootstrap, JavaScript, React, Java, Spring, and SQL.

ATP Flight School, Training Support Specialist, January 2021-May 2022   **Mesa, AZ**
- Acted as a liaison between students and professional staff by facilitating each student's access to all the resources and logistical capabilities of ATP to complete training on-time and within budget.
- Restructured communication flow among approximately 100+ students and 50+ instructors by conducting monthly feedback surveys to improve the overall communication flow between students and staff.
- Developed and implemented data-driven solutions to improve the efficiency of ATP's flight operations.
- Created Tableau dashboards for senior management to visualize core business KPIs (e.g., Monthly Revenue).
- Analyzed customer demographics, career interests, and academic backgrounds data to formulate new marketing strategies.

Arizona State University Housing, Desk Assistant, August 2018-October 2019   **Mesa, AZ**
- Provided customer service and support for residents, students, staff, and faculty.
- Managed keys, desk paperwork, temporary access cards and access control functions.
- Responded to phone call and walk-in questions and inquires.

PROJECTS

Arizona State University, Course Participant, Fall 2022   **Tempe, AZ**
- Applied directed graphical models and undirected models utilizing R programming.
- Performed statistical inference through computational methods such as Markov chain Monte Carlo sampling, variational inference, and Bayesian optimization.

Tech Talent South, *Team of 5*, Summer 2022   **Remote**
- Developed a Handwritten Digit Recognition App with MNIST dataset using NumPy, TensorFlow, and Keras libraries.
- Created a graphical user interface with the CNN model to take images as input and then process it to predict the digit.

Tech Talent South, *Team of 5*, Summer 2022   **Remote**
- Developed a Titanic Survival Prediction model utilizing predictive machine learning.
- Coordinated a logistic regression model using matplotlib and seaborn to predict Titanic passenger survival based on their personal and booking information.

Arizona State University, *Team of 3*, Fall 2021   **Mesa, AZ**
- Designed an airport design change plan for the arrival terminal at Phoenix-Mesa Gateway Airport focused on improving the overall customer experience and support the airport to meet its business obligations in the coming years.
- Devised a new inclined baggage carousel to expedite the baggage claim process in the arrival terminal.
- Proposed a pay-by-license plate parking system to streamline the payment process and maintain a structured traffic flow at the airport.

Arizona State University, *Team of 6*, Fall 2021   **Mesa, AZ**
- Collaborated with Shell Oil Company to implement an SOX compliance management solution.

- Devised a software governance risk compliance (GRC) product with MetricStream "M7" platform to satisfy the current and future integrated risk, compliance, and cybersecurity requirements of the company.
- Customized and configured the M7 platform utilizing python and SQL for back-end development and JavaScript and MetricStream for front-end development.
- Executed the project effectively using the agile methodology and utilized Python, SQL, JavaScript, MetricStream for front-end and back-end software development.

Arizona State University, *Team of 5*, Fall 2020
Mesa, AZ
- Developed a strategic business growth plan Amazon ecommerce by analyzing their sales, profit, revenue data.
- Cleaned and prepared the data for statistical analysis and predictive modelling.
- Created Tableau dashboard to present key APIs and areas of improvement.
- Performed internal/external business assessments and matrix analysis to formulate new marketing strategies to increase sales and shareholder value in the coming ten years.

LEADERSHIP & VOLUNTEER EXPERIENCE

International Service Devils Club, Volunteer Coordinator, January 2019 - December 2020
Mesa, AZ
- Collaborated on community service projects focused on advancing the living condition of underprivileged people and raising awareness of different global issues.
- Helped organized our annual international volunteer trip to Guatemala to support women and children living in impoverished areas.
- Increased volunteer events from 6/semester to 12/semester by partnering with more on-campus clubs and non-profit organizations in Phoenix.

Phoenix-Mesa Gateway Airport, Volunteer, November 2019 - December 2020
Mesa, AZ
- Volunteered as customer service representative in a team of 15 to help passengers and ensure a positive airport experience.
- Responded to any airport-related inquires and customer complaints.
- Aided airport management with airport events and facility projects.

Overview

As a graduate student in the 4+1 accelerated master's program in Technology with a concentration in Aviation Management and Human Factors at Arizona State University, I was exposed to educational theory and practical applications of several key topics related to enterprise management, leadership, and human systems and safety in aviation. In some of the courses such as Crew Resource Management (CRM) and Enterprise Planning and Implementation, I completed two notable research projects (Literature review and Case Analysis, respectively) that contribute to practical application of CRM and Business Project Planning and Implementation in a real-world context. In addition, I completed a Data Science Bootcamp, where I accomplished three notable data science projects using different machine learning and statistical models such as regression, decision trees and neural networks on big datasets using Python, SQL, and R programming languages.

Flying an aircraft can be quite stressful and challenging in certain situations. To learn more about flying under stressful conditions, I conducted a systematic literature review focused on situational awareness, anxiety and flying using the Arizona State University library database. The goal of the literature review was to explore the effects of anxiety on pilots' overall flight performance, with a special emphasis on pilots' visual attention and situational awareness. In the qualitative literature review, 15 out of 110 articles from 1990 onwards until 2014 were selected based on their topic relevancy to the research questions of the study. Some of the primary findings from the literature review were the Attention Control Theory, the Processing Efficiency Theory, and differences in scan patterns of novice and expert pilots based on several previous studies on visual scan behavior of pilots (Belleknes et al (1997); Ellis and Stark (1986); Tole et al. (1982)).

Furthermore, as project management is a topic receiving tremendous amount of attention today, identified as a critical skill set, which must be retained within the firm in the face

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of emerging business, my teammates and I devised a software governance risk compliance (GRC) product that focuses on SOX compliance management. The primary goal of this project was to make necessary configurations and customizations to "M7" software product identified in the base application based on the functional requirements specified by our client for the implementation of SOX Management solution. The project ran under the agile methodology to deliver the objects to client in a sprint form. After full deployment of the product, our quality assurance team performed different levels of testing to maintain to quality of the software.

Today, many corporations are moving towards utilizing empirical data for business decisions, data science enables companies to efficiently understand gigantic data from multiple sources and derive valuable insights to make smarter evidence-based decisions. In summer 2022, I completed a Data Science Bootcamp covering topics such as data analysis, object-oriented programming, cloud analytics, machine learning, and database management. Applying the knowledge of these topics in real-world problems, I conducted a stock price prediction analysis for Amazon stock data from Yahoo Finance using the Facebook Prophet Model and google sheets for financial analysis. In addition, I created a titanic prediction survival model and a handwritten digit recognition system using Random Forest and convolutional neural network algorithms to apply the theoretical concepts of machine and deep learning modelling (Artificial Intelligence).

Project 1

Title: Effects of Anxiety on Pilots' Visual Attention and Situational Awareness: A Literature Review

Course Name: Crew Res Mgmt./Line-Orient Flt

Professor Name: Dr. Robert Nullmeyer

Introduction: Situational Awareness (SA) plays a major role in flying among pilots. Many psychologists in this field are expanding their research on more cognitive factors of situational awareness such as multitasking. Multitasking in a complex environment (i.e., cockpit) under stressful flying conditions can impose severe threats to pilots' situational awareness and aeronautical decision-making skills. To efficiently process information from cockpit instruments, pilots must properly scan flight instruments and allocate their attention to task-relevant information in a timely manner. Poor visual perception or attention leads to a loss of situational awareness during the flight. Flight SQ006 incident in Taipei, Taiwan (2001) for example, resulted in a runway incursion due to poor visual perception of the airport surroundings.

Motivation: Like driving, flying an aircraft can often be stressful and challenging. To conduct a safe flight operation, pilots must complete all inflight tasks such as completing the checklists and proper radio communication with ATC. In real world, there is always a possibility of unexpected issues or malfunctions (e.g., engine failure) can result in pilots performing under stress. Operating under stress can negatively impact pilots' ability to multitask and complete all the required flight tasks (Strokes and Kite, 19997). Several studies such as Lavine et al (2002) suggest that effective information processing and situational awareness is closely related to pilots' allocation of visual attention. In addition, anxiety and stress causes randomness in pilots' scan patterns, proportionally declining situational awareness during the flight. This literature review study extended on exploring the effects of anxiety on situational awareness by reviewing previous literature on flying under stress and visual attention.

Methodology:

The following is a flow chart of different techniques used to select relevant literature to answer

the hypothesis questions:

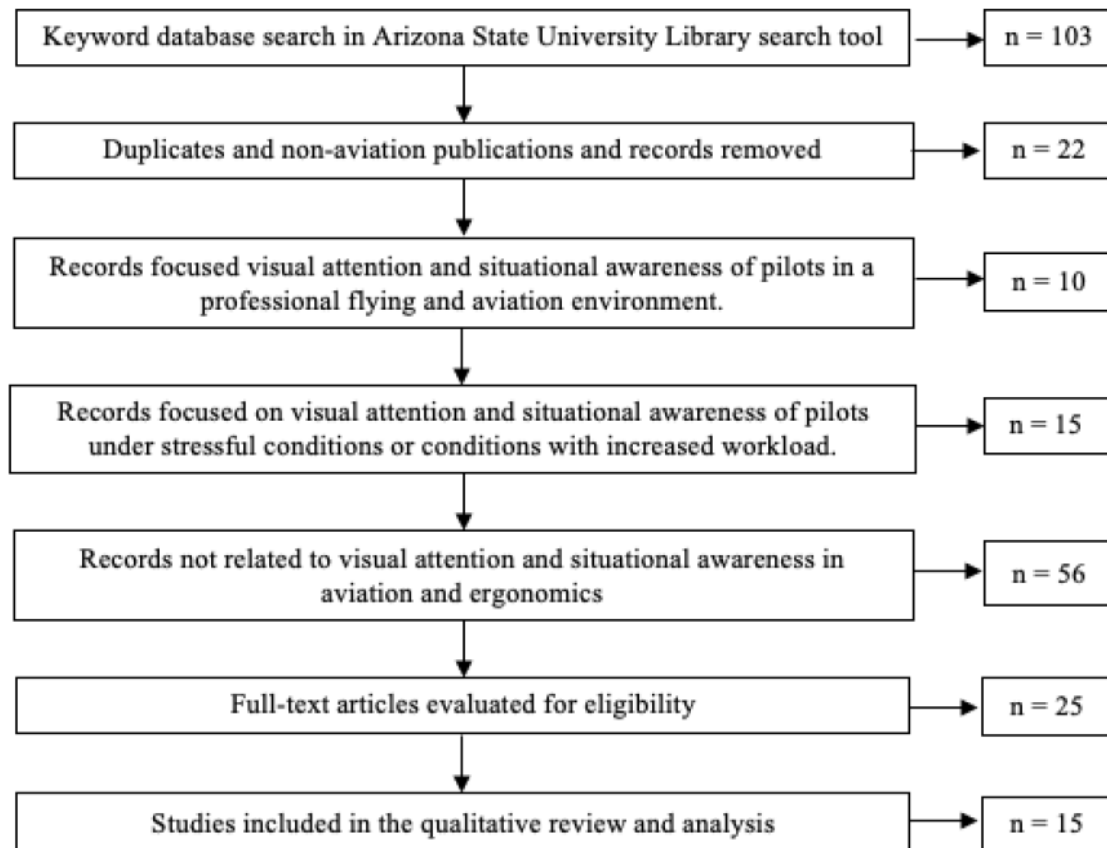|	
Keyword database search in Arizona State University Library search tool	n = 103
Duplicates and non-aviation publications and records removed	n = 22
Records focused visual attention and situational awareness of pilots in a professional flying and aviation environment.	n = 10
Records focused on visual attention and situational awareness of pilots under stressful conditions or conditions with increased workload.	n = 15
Records not related to visual attention and situational awareness in aviation and ergonomics	n = 56
Full-text articles evaluated for eligibility	n = 25
Studies included in the qualitative review and analysis	n = 15

Fig. 1. A flow diagram for the selection of articles

Key Findings:

- The influence of anxiety while flying can lead to several attentional changes, such as impairment of efficient task performance, which are further discussed in the Attentional Control Theory paper by Eysenck et al., 2007.

- The Processing Efficiency Theory predicts that anxiety reduces an operator's capabilities to process, update, and store data or information in the working memory. In addition, this reduction can vary, either entirely or partially, which is determined by the increase of effort input during a task. In addition to that, the Processing Efficiency Theory predicts

that anxiety has more adverse effects on the efficiency of processing than on the outcome of the task performance.

- In 1997, Bellekens, Wickens, & Kramer examined the differences between the pilot (novice and expert) expertise and visual scanning. The results of their study revealed that expert pilots were able to perform better on vertical and longitudinal control than novice pilots, however, they both performed similarly on lateral control. This shows that with time and more experience in flight training can help pilots improve their task management under stressful conditions.

Conclusion and Future Work:

This literature review focused on linking previous studies to determine effects of anxiety on visual attention and situation awareness, as they both are critical factors in accomplishing a safe flight operation. Understanding how pilots perform in terms of their visual attention and situation awareness performance under stressful conditions is essential in the process of implementing or improving system designs. For instance, understating the allocation of visual attention under stressful conditions can help system designers to create devices that can provide critical information to pilots not only in ideal situations but in unexpected, non-ideal situations. Furthermore, much of the research identified has been engineering and theory-driven, so there is a need for more research using experimental and qualitative approaches from human factors in aviation. As technological advancements progress in aviation, the concepts of visual attention and situation awareness under stressful conditions should be considered in order to provide operators with systems that can help to meet their task goals in life-threatening and chaotic conditions.

Project 2

Title: A Software Governance Risk Compliance (GRC) Product Focused on SOX Compliance Management

Course Name: Enterprise Planning & Implementation

Professor Name: Dr. Steve Cho

Introduction: SOX compliance refers to the annual audit in which a public company is obligated to provide proof of accurate, data-secured financial reporting. Basics of SOX Compliance:

   a) Keep data secure and free of tampering.

   b) Track attempted security breaches and resolutions.

   c) Prove Compliance for last 90 days (about 3 months).

   d) Keep event logs available for independent auditing.

In case of SOX IT, the IT department is responsible to prove compliance by providing documentation which shows that its employer has met the mandated financial transparency and data security thresholds. The very first step in cementing SOX internal controls is creating a "Control Environment," which is responsible for two things:

   1) Acknowledge the need for more transparency and regulation.

   2) Strive to perform control actions that mitigate risk and ensure the inviolability and reliability of financial information.

Motivation: SOX Compliance is not just a legal obligation but also a great business practice. Implementing SOX financial security controls has an add-on benefit for the organization to protect itself from data theft by cyberattack or insider threats.

Approach:

This project will be following the "Agile Methodology," where we will be releasing the objects in parts to the client in the form of sprints. We will be splitting the objects – Forms & Reports to

be developed across each sprint. Our objective and the requirement of the client is to receive all the objects within 6 sprints that will be spread across these 2 months. All the forms, reports (and charts if required) will be developed by our qualified software developers using PL/SQL and MetricStream customized JavaScript programming language for the back end and front-end development, respectively. Once the development is done, these objects would then be sent to our Internal Quality Assurance team who will be performing a thorough testing to maintain the quality of the product developed. Testing would be done at 3 levels: High Level Testing, Sanity Testing, and Regression Testing. After a successful round of testing by our Internal Testing Team the patch would then be deployed to the client's environment and a demo session would be held by our Business Analyst for presenting and showing the functionality of the developed objects to the client for their better understanding. Post this SHELL can conduct further business scenario testing by their business users.

These are the set of forms and reports to be delivered to the client. Following are the GRC Objects which would require change from the OOTB (Out of The Box) available GRC objects:

1. Risk
2. Financial Account
3. Process
4. Objective
5. Asset Class
6. Asset
7. Question and Procedure
8. Control

Key Outcomes:

Branch Name	Start Time	End Time
SOX Compliance Management	Feb 19, 2021	May 7, 2021
⊟ Deliverable 1 : Draft Final version of Project Plan	Feb 19, 2021	Feb 23, 2021
Timeline		
⊞ Budgeting		
Planning		
⊟ Deliverable 2 : Signed project plan/timeline plan from client	Feb 19, 2021	Feb 25, 2021
Approval by SHELL		
⊟ Deliverable 3 : Signed Budget Plan	Feb 19, 2021	Feb 25, 2021
⊞ Budget Approval by SHELL to begin the work		
Time consuming due to inflated cost of the project		
⊟ Deliverable 4 : Functional Specification Document signed off by client	Feb 19, 2021	Mar 1, 2021
⊞ FSD to be signed off by the client		
Split up of the task among the technical team		
Focusing on releasing the patches on time		
⊟ Deliverable 5 : Timely Delivery of Sprint #1 to Sprint #9	Mar 2, 2021	May 3, 2021
⊟ Deliverable 5.1 : Sprint #1	Mar 3, 2021	Mar 12, 2021
GRC and Risk Reporting		
⊟ Deliverable 5.2 : Sprint #2	Mar 13, 2021	Mar 19, 2021
Financial Account Reporting		
⊟ Deliverable 5.3 : Sprint #3	Mar 20, 2021	Mar 26, 2021
Control Reporting		
⊟ Deliverable 5.4 : Sprint #4	Mar 27, 2021	Apr 2, 2021
Objective Reporting		
⊟ Deliverable 5.5 : Sprint #5	Apr 3, 2021	Apr 9, 2021
Asset, Classes & Issue Deficiency Reporting		
⊟ Deliverable 5.6 : Sprint #6	Apr 10, 2021	Apr 16, 2021
Assets & External audit Reporting		
⊟ Deliverable 5.7 : Sprint #7	Apr 17, 2021	Apr 23, 2021
⊞ Control Owner Confirmation & Question Procedures Reporting		
⊟ Deliverable 5.8 : Sprint #8	Apr 24, 2021	Apr 30, 2021
Process and Testing Reporting		
⊟ Deliverable 5.9 : Sprint #9	May 1, 2021	May 3, 2021
Overall Controls Status Reporting		
Change Management Reporting		
Control risk assessment Reporting		
Deliverable 6 : Production instance made ready for the business users	May 3, 2021	May 7, 2021

Probability of Failure (Pf)					Consequence of Failure (Cf)					
Item	Maturity	Complexity	Dependency	Average (Pf)	Cost	Schedule	Reliability	Performance	Average (Cf)	Overall Risk Factor
A	0.3	0.3	0.7	0.43	0.5	0.7	0.3	0.3	0.45	0.69
B	0.3	0.3	0.5	0.37	0.1	0.7	0.7	0.5	0.5	0.69
C	0.1	0.1	0.4	0.2	0.1	0.1	0.1	0.1	0.1	0.28
D	0.3	0.3	0.4	0.33	0.2	0.6	0.6	0.6	0.5	0.67
E	0.4	0.6	0.7	0.57	0.8	0.9	0.3	0.4	0.6	0.83
F	0.3	0.7	0.7	0.57	0.6	0.8	0.8	0.7	0.73	0.88

Figure 2.3.1.B - Quantitative Risk Spreadsheet to showcase Overall Risk Factor.
Figure 2.3.1.B is derived using the formulas from Figure 2.3.1.A
Items (A, B, C, D, E, F) maps to section 2.1.1.a

Conclusion:

- *Exceptions/other problems:* We expected to run into roadblocks such as communication gaps on the requirements of the customer. However, our strong Business Analyst team handled the situation maturely and both the parties came to the same page. We were able to address most of the changes requested by the client while still maintaining our budget.

- *Mitigation strategies employed:* We employed checks and balances to avoid issues escalating. Our leaders and managers worked together, while consulting our staff, to provide the customer with quick and efficient answers to their issues. We also used a strict schedule to help mitigate issues arising.

- *Success of the strategies:* We were able to complete and deliver all sprint patches on time. We also had an excellent quality assurance team which made sure the quality of our products being delivered were excellent. Our preplanned mitigation strategies helped us overcome any hurdle that we encountered during the project. We used team outings and incentives to keep employees enthusiastic about their work.

- *Suggestions for future:* As of now, we pick the change requirements from customers only if it is feasible to be developed on our product platform. During this project we noticed

that some of the features requested by the client was not readily available on the

platform, but it could have been developed from scratch by our developers. However,

that is time consuming. In the future, we are planning to upgrade our platform which will

give us the flexibility to incorporate more features requested by the customer. This would

save time and create more efficient product for our customers

Project 3

Titles: Stock Price Prediction Analysis, Titanic Survival Prediction Model, and Handwritten digit recognition system.

Course: Data Science Bootcamp

Institution: Tech Talent and Strategy

Introduction: The three projects (Stock Price Prediction Analysis, Titanic Survival Prediction Model, and Handwritten digit recognition system) used machine learning algorithms to forecast future stock prices, titanic passenger survival prediction based on passenger booking information, and classifying handwritten digits using a neural network on MNIST dataset.

Motivation: In this current work of technological evolution, artificial intelligence and machine learning are helping businesses and researchers gain valuable data insights from big data sources and apply different algorithms to predict future variables such as sales and profit estimation. As organizations become more data-driven, data science and machine learning can help departments build automated models that process massive volumes of data quickly and use it to solve complex business problems.

Algorithms:

-   Facebook Prophet Model: Stock price datasets is continuous; therefore, time-series analysis was performed using the FB prophet algorithm in Python.

-   Random Forest: A set of algorithms were tested for accuracy in the titanic prediction project and random forest classifier had the highest accuracy in both, training, and test data.

-   Convolutional Neural Network: To develop handwritten digit recognition system, the convolutional deep learning neural networks was used for image classification from scratch because of its effectiveness and accuracy.

Key Results:

Stock Price Prediction for Amazon November 2022:
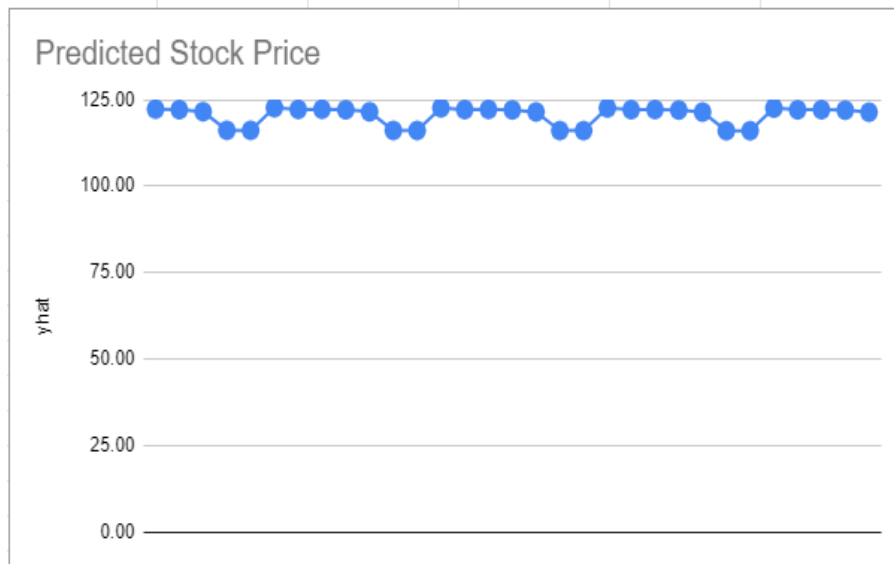
Titanic Survival Prediction Model (Random Forest):

In [85]:
```python
#Print Prediction of Random Forest Classifier model
pred = model[6].predict(X_test)
print(pred)

#Print a space
print()

#Print the actual values
print(Y_test)
```

```
[1 1 1 0 0 0 1 0 0 1 1 1 1 0 0 1 0 1 0 0 1 1 1 1 0 0 0 0 0 0 0 0 1 1 1 1
 1 1 0 0 0 1 0 1 0 1 0 0 1 1 0 1 0 1 0 0 1 1 1 0 0 0 1 0 0 1 0 1 0 1 1 1 1 1 1
 0 0 1 0 0 0 0 1 0 1 1 0 0 0 1 0 0 0 1 1 1 0 1 1 0 0 0 1 0 0 0 0 1 0 0 0 1
 0 1 1 0 1 0 0 0 0 0 0 0 1 0 0 0 0 0 1 0 1 1 1 1 1 1 0 0 0 0 0 1]

[0 0 1 0 0 0 1 0 0 0 1 1 1 0 0 1 0 1 1 0 0 1 1 1 0 0 0 0 1 0 0 0 0 1 1 0 1
 1 1 1 1 1 0 0 0 0 1 0 0 1 1 0 1 0 0 0 0 0 1 0 0 0 0 1 0 0 1 1 0 1 0 1 1 1
 0 0 1 1 0 0 0 1 1 1 1 0 0 0 1 0 0 0 1 1 1 0 1 1 0 1 0 1 0 0 0 0 1 0 0 0 0
 1 1 1 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 0 0 0 0 0 1]
```

In [98]:
```python
##### my_information:
# pclass = 3
# sex = 1
# age = 22
# SibSip = 0
# parch = 0
# fare = 8
# embarked= 0

my_survival = [[3,1,22,0, 0, 8, 0]]

pred = model[6].predict(my_survival)
print(pred)

if pred == 0:
  print('Dead!')
else:
  print('Nice! You survived')
```
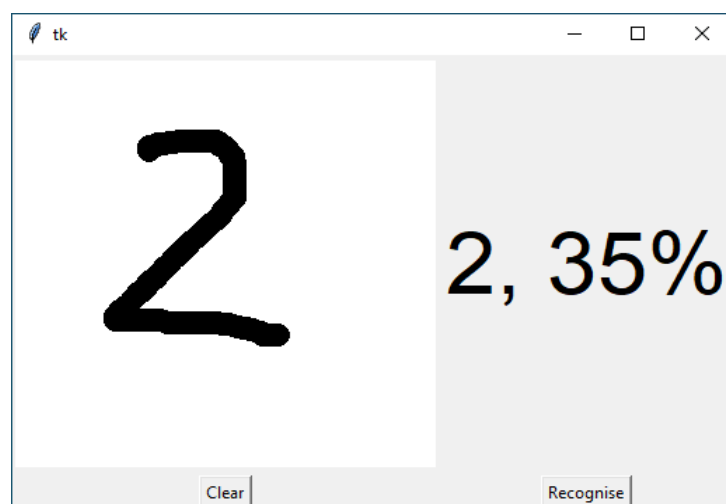
```
[1]
Nice! You survived
```

Handwritten Digit Recognition System (CNN model):

Conclusion:

- *Stock Price Prediction:* Using the Facebook prophet model, we predicted the stock prices of Amazon for the month of November 2022 based on one year data (October 2021-October 2022). The analysis revealed the investment in amazon stock might not be good decision for short-term but rather for long-term.

- *Titanic Survivor Prediction:* Using the random forest classifier model, we were able to predict chances of passenger survival based on information such as passenger boarding class, sex, age, fare paid, embarked, etc.

- *Handwritten Digit Recognition System:* In this project, we built a deep learning model focused on handwritten digit recognition app. For image classification purposes, we developed and trained a convolutional neural network, which works great for classifying images. Finally, for practical use we built a Graphical User Interface (GUI), where we can draw a digit (e.g., 1) on the interactive canvas and it will identify the drawn digit.

Reflection

By completing projects in various courses in the aviation management and human factors program and outside of ASU, I mastered a diverse set of skills and knowledge that is under high demand in academia and the job market today. Some of the technical skills I learned throughout my graduate studies are but not limited to systematic literature review, data analysis, python programming, agile project management, and software development. Some of the educational theories I learned through my notable projects include understanding Crew Resource Management in Aviation, Applied Attention Theory in Flying, Project Management in Business, Software Development Lifecyle, Fundamentals of Data Science, and Machine Learning Algorithms.

Through the systematic literature review on effects of anxiety on pilots', I gained practical experience in conducting an APA style systematic quantitative literature review. In this literature, review, I reviewed around 115 articles related to Aviation, which helped understand the research gap in the aviation industry, especially related to effects of anxiety in different flying environments. In addition, I gained a deeper understanding of several renown attention theories in the human systems engineering field such as the Attention Control Theory and Processing Efficiency Theory that have a significant impact on studies pertaining to aviation pilots. In addition to attention theories, I was able to further understand their different implications on flying-related studies to improve pilot training, flight safety and reducing human error in aviation.

In the project management and data science projects, I learned advanced statistical techniques to draw inference on big data sets and perform exploratory analysis using different tools such as Python libraries, SQL, and RStudio. Through the GRC product for SOX compliance project, I attained a deeper understanding of agile project management using Kanban, creating a project management plan for clients, analyzing client requirements, configuring, and customizing "M7" software product, and estimating project budget using

matrixes. In addition, through the data science (machine learning) projects, I was exposed to different machine and deep learning algorithms, techniques to extract data, and ML/DL model optimization necessary to create unbiased model with overfitting the data and sustaining model efficiently for applications on other data sets.