*Predicting Outcomes for Adjudication Appeals through Machine Learning*

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*Abstract*—Individuals who wish to work in or with the United States Government are required to undergo a background investigation. These investigations focus on investigating an individual and any and all aspects of their personal life and behavior going back 5-10 years. Some of these cases are denied and then later appealed. Of the cases that are appealed, another investigation is done and a final decision is made on whether or not the individual is granted or denied a security clearance.

Keywords—machine learning, fit, predict, model, classifiers, security clearance, clearance appeals, adjudicative guidelines, scikit-learn, Jupyter Notebooks, Python, Microsoft Access

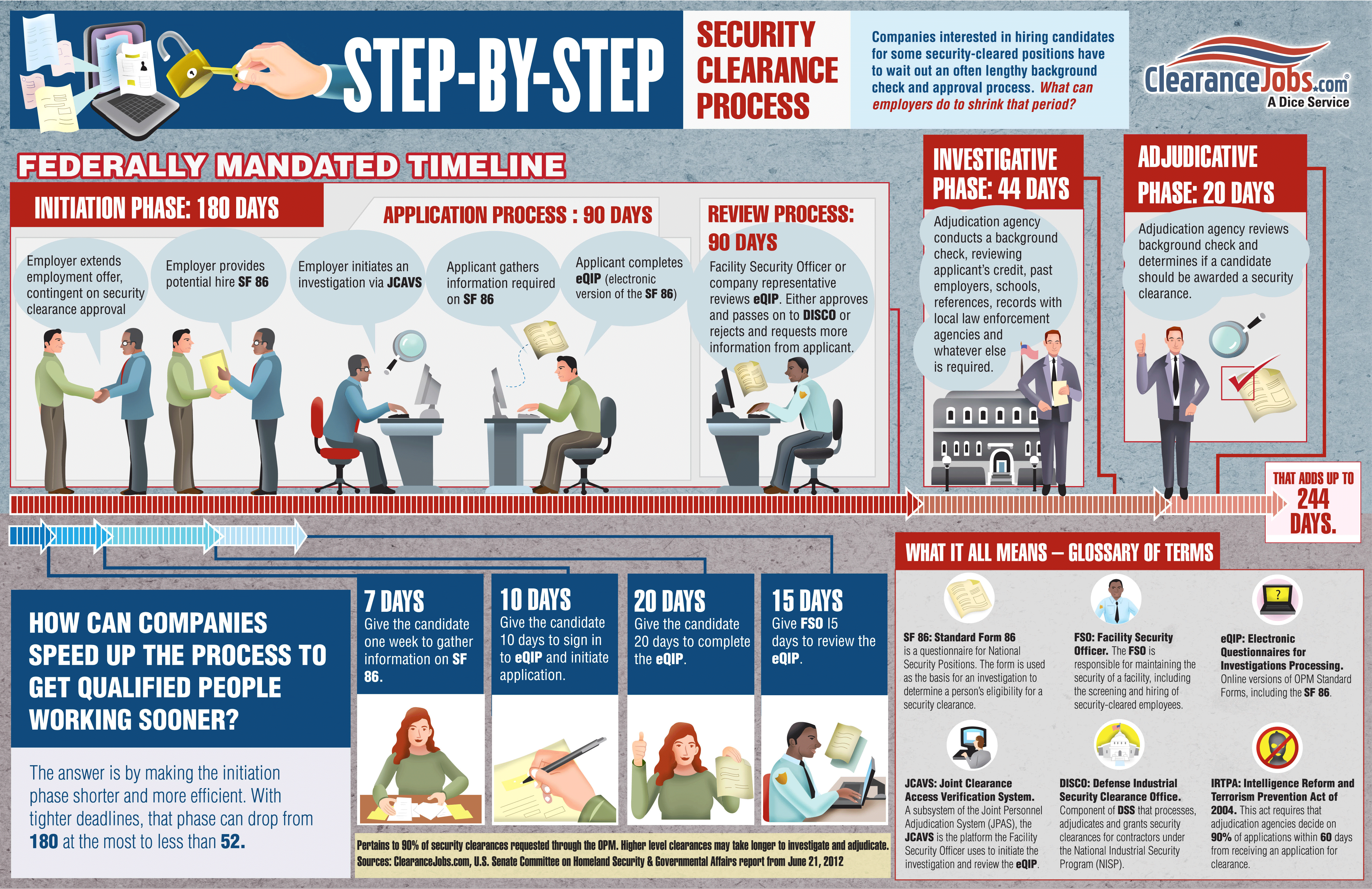
# Introduction

The security clearance process is a necessity for anyone planning on working with government sensitive information. All applicants need to go through the security clearance process, and some need to follow the appeals process, in order to obtain a security clearance. The process is time consuming and has a lot of moving parts, both for the applicant and for the government. The reason behind the security clearance process is to determine the risk on the government associated with giving the applicant access to sensitive information. As it currently stands, the Defense Security Service, an agency within the Department of Defense for tackling security clearances, is starting to research solutions for reducing this taxing aspect of the government by using predictive models [15]. Through this research, the feasibility of machine learning as a solution to shortening the length of security clearances will be discussed.

# Security Clearance Process

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The current security appeals process has multiple steps and multiple chances for an applicant to be denied or accepted. The following graphic shows the outline of the entire process for an initial security clearance:

 [13]

The process begins by an applicant being hired by an organization. The organization will determine the level of clearance (Secret or Top Secret) needed by the employee to perform their job duties. The organization will then have the applicant begin to fill out the SF86 form. An SF86 form is the form that applicants must fill out to determine their eligibility for a clearance [14]. The form includes information on the 13 adjudicative guidelines. More information on the adjudicative guidelines can be found in Appendix A.

Once the SF86 is completed by the applicant, the form and its contents will be reviewed by the organization’s Facility Security Officer or a company representative. The reviewer either approves it and passes it on to the next step or rejects it and asks the applicant for additional information. Once the form is approved it is passed on to an adjudicative agency that investigates the contents of the form. This includes meeting with references to discuss the applicant and ensure that the form was filled out truthfully. Once the investigation process is complete, the notes from all investigators is then passed on to a reviewer to make the final decision on whether the applicant is granted or denied a security clearance.

# Security Clearance Adjudication Process

After an applicant has submitted their SF86 form, a Facility Security Officer has reviewed it, an investigation is conducted, and an Adjudicator has reviewed the relevant information, an applicant is given a response on whether they are accepted or denied a security clearance. The first step in the process begins when the initial decision for the applicant happens to be ‘Denied’. The following flowchart describes the adjudication process:

[8]

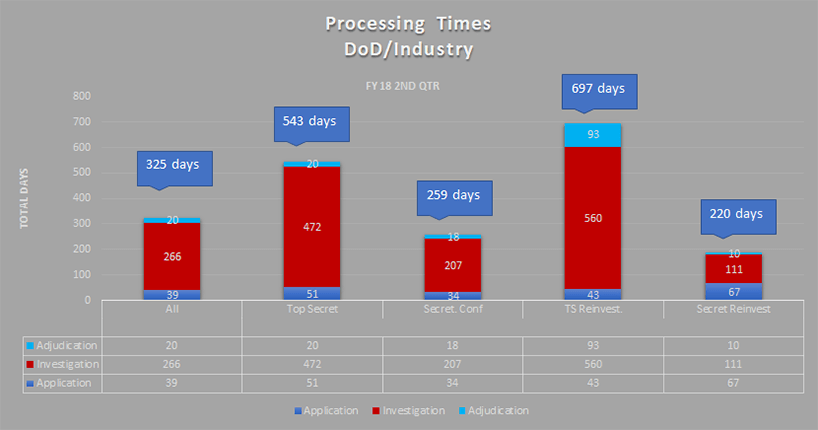
The adjudicator will issue a Statement of Reasons (SOR) [9]. The SOR will include information on why their clearance was denied. The applicant then has 20 days to respond to the SOR and will include information that explains, refutes, or mitigates any of the allegations that were made in the SOR [10].

Once the adjudicator receives the applicant’s SOR response, they will then review the applicant’s rebuttal and process the information that was included. If the SOR response information is not found to be sufficient in addressing the allegations, the adjudicator will then issue a Letter of Denial (LOD). The letter of denial will explain the reasons behind the denial after the SOR response was reviewed.

Once an applicant receives a LOD, they can then apply for a hearing with the Defense Office of Hearings and Appeals judge. This hearing is done in person and will review the allegations made in the SOR and the applicant’s responses to it. Once the hearing is over the judge will make a recommendation based on the hearing and send their response to the Public Service Advisory Board (PSAB). The PSAB will then issue the final decision of denied/revoked or granted back to the applicant.

# Length of Clearance Process

The length of the clearance process can take a very long time, without the appeals process even included. The following graphic shows the length of time needed to process initial and renewal clearances for Secret and Top Secret

[11]

For initial Secret clearances the average processing time is around 259 days and the initial Top Secret processing time is around 543 days. This is due to the sensitivity of the information/places that the applicant will need in order to perform their jobs. Top Secret clearances take longer due to the fact that there is more risk involved with allowing an applicant access to this type of information.

For a renewal Secret clearance the process takes 220 days and the renewal Top Secret clearance takes about 697 days. The significant increase in processing time for a Top Secret renewal clearance compared to the initial application process is in part due to the transition of the processing of clearances from the National Background Investigation Bureau (NBIB) to the Department of Defense (DOD) as well as the lack of reciprocity and continuous evaluation [12].

# Proposed Solution

The length of the clearance process and the adjudication process poses a significant burden on NBIB and DOD. A proposed solution for reducing the time it takes to process these cases and the length of time it takes an adjudicator (from previous section it takes about 20 days to process one case) to make a decision is to use machine learning. Machine Learning takes data and builds a model. The models created “train” a classifier, a statistics model, to help it determine and predict an outcome with high accuracy. By feeding in the appeals case data, a model can use the present information to associate with a status of denied. The hope of this solution is to significantly reduce the time it takes an adjudicator to render a status of denied or granted with high confidence.

# Tools

Several tools were used throughout the process to collect and manipulate the data as well as fit models and predict fields. Many of the tools used are open-source and have documentation freely available for use. The three tools that were used for this research are Microsoft Access, Jupyter Notebooks, and Sci-Kit Learn. All three tools offered different functionality that was used together to transform a raw dataset into models that predict attribute assignment.

## Microsoft Access

The current collection of appeals cases and their specifics is stored in a Microsoft Access database. Access is a relational database management system (RDBMS) that is primary written and interacted with through a GUI (graphical user interface) or through SQL queries. Microsoft Access allows users to create databases, input data, query, and generate reports [1].

The Security\_Appeals database consists of a Main table that houses all of the relevant case information, as well as the Criteria Findings tables. Microsoft Access allows the user to manipulate the data via sorting and filtering for any field in the database. A data dictionary of the Main table can be found in Appendix B.

## Jupyter Notebooks

Jupyter is an open-source project that allows users to visually manipulate code in order to have a more interactive experience. Jupyter supports multiple coding languages, allows you to share notebooks, produce interactive output, and works well with tools that specialize in big data [2]. Jupyter also has an extensive list of documentation to help users learn how to use and work with it.

Jupyter Notebooks offer an easier way to debug code and also visualize data. This tool allows developers to process code snippets separately as opposed to running a single script and allows users to print elaborate graphs that a regular terminal cannot handle. This tool was primarily used for coding Python.

## Scikit-Learn

Scikit-learn is a robust library primarily used for data analytics and machine learning. This open-source library offers functionality for classification, regression, clustering, dimensionality reduction, model selection, and preprocessing [3]. Classification allows for identifying objects and placing them in a specific category. Model selection allows for comprehensive testing of a classifier to measure the effectiveness.

The two main classes of functionality used for the data were classification and model selection. These sub-groups allowed for different classifiers to be run against the dataset and then measured for their performance on how well they correctly predicted the outcome.

# Machine Learning

Machine Learning techniques attempt to mimic human thought and make complex decisions on input using advanced statistics. There are many models that handle different forms of input and use different statistical models to predict the desired type of outcomes. There are a myriad of classification models that are supported by scikit-learn and available for use through their python library. In addition to allowing the models to be used to fit the training data and predict the test data, there are also many different ways to calculate the accuracy of the model in terms of fit and how well the model has correctly predicted the value. When it comes to determining the performance of a classifier and the model produced by it, several factors are used to determine its effectiveness like the roc\_auc, f1 score, accuracy score, precision, and recall.

# Classification Models

## Random Forest

The RandomForest classifier works by “fitting a number of decision tree classifiers on various sub-samples of the dataset and uses averaging to improve the accuracy and control over-fitting” [4].

It is recommended to set parameter values to reduce memory consumption and computing time so that trees do not get too large when used on massive datasets. The parameters used in classification for this dataset are bootstrap=True, class\_weight=none, criterion=’gini’. Bootstrap is whether or not bootstrap samples are used when building trees, class\_weight is the weights associated with the classes, and criterion is the function used to measure the quality of the split. The methods used in classification for this dataset are fit and predict.

\*\*\* how this classifier was run on data

## Gaussian Naïve Bayes

The GaussianNB classifier works by applying Bayes’ theorem with the “naïve” assumption that there is conditional independence between each features given the class variable value.

The parameters used in classification for this dataset are priors=None and var\_smoothing=1e-09. Priors is the prior probabilities of the classes and var\_smoothing is the portion of the largest variance of all features that is added to variances for calculation stability. The methods used in classification for this dataset are fit and predict.

\*\*\*how this classifier was run on data

## Logistic Regression

The LogisticRegression classifier works by explaining the relationship between a single dependent binary variable and either single or multiple nominal independent variables.

The parameters used in classification for this dataset are c=1.0, class\_weight=None, dual=False, and fit\_intercept=True. C is the inverse of regularization strength, class\_weight is the weights associated with classes, dual is the formulation, and fit\_intercept is specifying if a constant should be added to the decision function. The methods used in classification for this dataset are fit and predict.

\*\*\*how this classifier was run on data

## Decision Tree

The DecisionTree classifier works by predicting the values of a target variable by learning simple decision rules inferred from the data features.

The parameters used in classification for this dataset are class\_weight=None, criterion=’gini’, and max\_depth=None. Class\_weight is the weight associated with a class, criterion is the function used to measure the quality of the split, and max\_depth is the maximum depth of the tree. The methods used in classification for this dataset are fit and predict.

\*\*\*how this classifier was run on data

## K Neighbors

The KNeighbors classifier works by finding a predefined number of training samples closest in distance to the new point and predicting the label from there.

The parameters used in classification for this dataset are algorithm,=’auto’, leaf\_size=30, metric=’minkowski’, metric\_params=None, n\_jobs=None, n\_neighbors=6, p=2, and weights=’uniform’. Algorithm is the algorithm used to compute the nearest neighbor (auto will decide the most appropriate one based on values passed to fit()), leaf\_size is the size of the leafs, metric is the distance metric used for the tree (minkowski is default), metric\_params are the additional keywords for the metric function, n\_jobs is the number of parallel jobs to run for neighbors, n\_neighbors is the number of neighbors to use by default (default is 5), p is the power parameter for the minkowski metric, and weights is the weight of all points in each neighborhood. The methods used in classification for this dataset are fit and predict.

\*\*\*how this classifier was run on data

# Accuracy Metrics

## Roc Auc Score

Roc Auc stands for Compute Area Under the Receiver Operating Characteristic Curve. A ROC curve works by plotting the true positive rate (TPR = TP/(TP+FN)) and the false positive rate (FPR = FP/(FP+TN)). AUC works by calculating the area under the ROC curve, and is the probability that a model ranks a random positive example more highly than a random negative value. This works by comparing the y\_true values against the y\_test values. The range for this score is 0 (predictions are 100% wrong) to 1 (predictions are 100% correct) [5].

\*\*\*how this score was run on data

## F1 Score

The F1 score is a weighted average of the precision and recall. This is calculated by 2 \* [(precision \* recall) / (precision + recall)]. The range for this score is 0 (high false positives and high false negatives) to 1 (low false positives and low false negatives).

\*\*\*how this score was run on data

## Accuracy Score

The accuracy score calculates the number of correct predictions compared to their actual values. It ranges from 0 (none of the predicted values are the same as their actual values) to 1 (all of the predicted values are the same as their actual values).

\*\*\*how this score was run on data

## Precision Score

Precision is used to measure the number of true positives. It is calculated by true positives / (true positives + false positives). The range for this score is 0 (when it predicts a positive, it is correct 0% of the time) to 1 (when it predicts a positive, it is correct 100% of the time).

\*\*\*how this score was run on data

## Recall Score

Recall is used to measure the number of true positives. It is calculated by true positives / (true positives + false negatives). The range for this score is 0 (correctly identifies 0% of true values) to 1 (correctly identifies 100% of true values).

\*\*\*how this score was run on data

# Summary and Conclusion

## Text Based Analytics [6]

## Boolean Based Analytics[7]

# Use Cases and Limitations

# Future Work

The main aspect of future work is adding the most current years of data to the dataset. The current data only has information up through 2016 – adding the data from years 2017 and 2018 enhances the data points in the training data and heightens the chances for a more successful model prediction. The more data that is present in the training data the more chances the classifier has at associating what it sees in X (all attributes/text input) means decision y (accepted/denied) is the correct decision.

Another aspect of future work is building out a more robust database that includes more data attributes than the ones currently in the database (see Appendix A for a list of all attributes). The more data attributes there are, the more types of patters the classifier can identify to help it make more complex decisions.

Another aspect of future work is including more classifiers. By including more classifiers we can determine which one works best for this type of data.

##### Acknowledgments

I would like to acknowledge Daniel Costa, my advisor; Sarah Miller, my advisor; Randall Trzeciak, my program advisor; and Carrie Gardner, my colleague, for her support on this work.

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##### Appendix A:

##### Adjudicative Guidelines for Determining Eligibility for Access to Confidential Information[[1]](#footnote-1)

**Guideline A:   
Allegiance to the United States**

**3. The Concern***.*An individual must be of unquestioned allegiance to the United States. The willingness to safeguard classified information is in doubt if there is any reason to suspect an individual's allegiance to the United States.

**4. Conditions that could raise a security concern and may be disqualifying include:**

(a) involvement in, support of, training to commit, or advocacy of any act of sabotage, espionage, treason, terrorism, or sedition against the United States of America;

(b) association or sympathy with persons who are attempting to commit, or who are committing, any of the above acts;

(c) association or sympathy with persons or organizations that advocate, threaten, or use force or violence, or use any other illegal or unconstitutional means, in an effort to:

(1) overthrow or influence the government of the United States or any state or local government;

(2) prevent Federal, state, or local government personnel from performing their official duties;

(3) gain retribution for perceived wrongs caused by the Federal, state, or local government;

(4) prevent others from exercising their rights under the Constitution or laws of the United States or of any state.

**5. Conditions that could mitigate security concerns include:**

(a) the individual was unaware of the unlawful aims of the individual or organization and severed ties upon learning of these;

(b) the individual's involvement was only with the lawful or humanitarian aspects of such an organization;

(c) involvement in the above activities occurred for only a short period of time and was attributable to curiosity or academic interest;

(d) the involvement or association with such activities occurred under such unusual circumstances, or so much times has elapsed, that it is unlikely to recur and does not cast doubt on the individual's current reliability, trustworthiness, or loyalty.

**Guideline B:   
Foreign Influence**

**6. The Concern.** Foreign contacts and interests may be a security concern if the individual has divided loyalties or foreign financial interests, may be manipulated or induced to help a foreign person, group, organization, or government in a way that is not in U.S. interests, or is vulnerable to pressure or coercioon by any foreign interest. Adjudication under this Guideline can and should consider the identity of the foreign country in which the foreign contact or financial interest is located, including, but not limited to, such considerations as whether the foreign country is known to target United States citizens to obtain protected information and/or is associated with a risk of terrorism.

**7. Conditions that could raise a security concern and may be disqualifying include:**

(a) contact with a foreign family member, business or professional associate, friend, or other person who is a citizen of or resident in a foreign country if that contact creates a heightened risk of foreign exploitation, inducement, manipulation, pressure, or coercion;

(b) connections to a foreign person, group, government, or country that create a potential conflict of interest between the individual's obligation to protect sensitive information or technology and the individual's desire to help a foreign person, group, or country by providing that information;

(c) counterintelligence information, that may be classified, indicates that the individual's access to protected information may involve unacceptable risk to national security;

(d) sharing living quarters with a person or persons, regardless of citizenship status, if that relationship creates a heightened risk of foreign inducement, manipulation, pressure, or coercion;

(e) a substantial business, financial, or property interest in a foreign country, or in any foreign-owned or foreign-operated business, which could subject the individual to heightened risk of foreign influence or exploitation;

(f) failure to report, when required, association with a foreign national;

(g) unauthorized association with a suspected or known agent, associate, or employee of a foreign intelligence service;

(h) indications that representatives or nationals from a foreign country are acting to increase the vulnerability of the individual to possible future exploitation, inducement, manipulation, pressure, or coercion;

(i) conduct, especially while traveling outside the U.S., which may make the individual vulnerable to exploitation, pressure, or coercion by a foreign person, group, government, or country.

**8. Conditions that could mitigate security concerns include:**

(a) the nature of the relationships with foreign persons, the country in which these persons are located, or the positions or activities of those persons in that country are such that it is unlikely the individual will be placed in a position of having to choose between the interests of a foreign individual, group, organization, or government and the interests of the U.S.;

(b) there is no conflict of interest, either because the individual's sense of loyalty or obligation to the foreign person, group, government, or country is so minimal, or the individual has such deep and longstanding relationships and loyalties in the U.S., that the individual can be expected to resolve any conflict of interest in favor of the U.S. interest;

(c) contact or communication with foreign citizens is so casual and infrequent that there is little likelihood that it could create a risk for foreign influence or exploitation;

(d) the foreign contacts and activities are on U.S. Government business or are approved by the cognizant security authority;

(e) the individual has promptly complied with existing agency requirements regarding the reporting of contacts, requests, or threats from persons, groups, or organizations from a foreign country;

(f) the value or routine nature of the foreign business, financial, or property interests is such that they are unlikely to result in a conflict and could not be used effectively to influence, manipulate, or pressure the individual.

**Guideline C:   
Foreign Preference**

**9. The Concern.** When an individual acts in such a way as to indicate a preference for a foreign country over the United States, then he or she may be prone to provide information or make decisions that are harmful to the interests of the United States.

**10. Conditions that could raise a security concern and may be disqualifying include:**

(a) exercise of any right, privilege or obligation of foreign citizenship after becoming a U.S. citizen or through the foreign citizenship of a family member. This includes but is not limited to:

(1) possession of a current foreign passport;

(2) military service or a willingness to bear arms for a foreign country;

(3) accepting educational, medical,   
retirement, social welfare, or other such benefits from a foreign country;

(4) residence in a foreign country to meet citizenship requirements;

(5) using foreign citizenship to protect financial or business interests in another country;

(6) seeking or holding political office in a foreign country;

(7) voting in a foreign election;

(b) action to acquire or obtain recognition of a foreign citizenship by an American citizen;

(c) performing or attempting to perform duties, or otherwise acting, so as to serve the interests of a foreign person, group, organization, or government in conflict with the national security interest;

(d) any statement or action that shows allegiance to a country other than the United States: for example, declaration of intent to renounce United States citizenship; renunciation of United States citizenship.

**11. Conditions that could mitigate security concerns include:**

(a) dual citizenship is based solely on parents' citizenship or birth in a foreign country;

(b) the individual has expressed a willingness to renounce dual citizenship;

(c) exercise of the rights, privileges, or obligations of foreign citizenship occurred before the individual became a U.S. citizen or when the individual was a minor;

(d) use of a foreign passport is approved by the cognizant security authority;

(e) the passport has been destroyed, surrendered to the cognizant security authority, or otherwise invalidated;

(f) the vote in a foreign election was encouraged by the United States Government.

**Guideline D:   
Sexual Behavior**

**12. The Concern.** Sexual behavior that involves a criminal offense, indicates a personality or emotional disorder, reflects lack of judgment or discretion, or which may subject the individual to undue influence or coercion, exploitation, or duress can raise questions about an individual's reliability, trustworthiness and ability to protect classified information. No adverse inference concerning the standards in the Guideline may be raised solely on the basis of the sexual orientation of the individual.

**13. Conditions that could raise a security concern and may be disqualifying include:**

(a) sexual behavior of a criminal nature, whether or not the individual has been prosecuted;

(b) a pattern of compulsive, self-destructive, or high-risk sexual behavior that the person is unable to stop or that may be symptomatic of a personality disorder;

(c) sexual behavior that causes an individual to be vulnerable to coercion, exploitation, or duress;

(d) sexual behavior of a public nature and/or that which reflects lack of discretion or judgment.

**14. Conditions that could mitigate security concerns include:**

(a) the behavior occurred prior to or during adolescence and there is no evidence of subsequent conduct of a similar nature;

(b) the sexual behavior happened so long ago, so infrequently, or under such unusual circumstances, that it is unlikely to recur and does not cast doubt on the individual's current reliability, trustworthiness, or good judgment;

(c) the behavior no longer serves as a basis for coercion, exploitation, or duress;

(d) the sexual behavior is strictly private, consensual, and discreet.

**Guideline E:   
Personal Conduct**

**15. The Concern.** Conduct involving questionable judgment, lack of candor, dishonesty, or unwillingness to comply with rules and regulations can raise questions about an individual's reliability, trustworthiness and ability to protect classified information. Of special interest is any failure to provide truthful and candid answers during the security clearance process or any other failure to cooperate with the security clearance process. 

The following will normally result in an unfavorable clearance action or administrative termination of further processing for clearance eligibility:

(a) refusal, or failure without reasonable cause, to undergo or cooperate with security processing, including but not limited to meeting with a security investigator for subject interview, completing security forms or releases, and cooperation with medical or psychological evaluation;

(b) refusal to provide full, frank and truthful answers to lawful questions of investigators, security officials, or other official representatives in connection with a personnel security or trustworthiness determination.

**16. Conditions that could raise a security concern and may be disqualifying also include:**

(a) deliberate omission, concealment, or falsification of relevant facts from any personnel security questionnaire, personal history statement, or similar form used to conduct investigations, determine employment qualifications, award benefits or status, determine security clearance eligibility or trustworthiness, or award fiduciary responsibilities;

(b) deliberately providing false or misleading information concerning relevant facts to an employer, investigator, security official, competent medical authority, or other official government representative;

(c) credible adverse information in several adjudicative issue areas that is not sufficient for an adverse determination under any other single guideline, but which, when considered as a whole, supports a whole-person assessment of questionable judgment, untrustworthiness, unreliability, lack of candor, unwillingness to comply with rules and regulations, or other characteristics indicating that the person may not properly safeguard protected information;

(d) credible adverse information that is not explicitly covered under any other guideline and may not be sufficient by itself for an adverse determination, but which, when combined with all available information supports a whole-person assessment of questionable judgment, untrustworthiness, unreliability, lack of candor, unwillingness to comply with rules and regulations, or other characteristics indicating that the person may not properly safeguard protected information. This includes but is not limited to consideration of:

(1) untrustworthy or unreliable behavior to include breach of client confidentiality, release of proprietary information, unauthorized release of sensitive corporate or other government protected information;

(2) disruptive, violent, or other inappropriate behavior in the workplace;

(3) a pattern of dishonesty or rule violations;

(4) evidence of significant misuse of Government or other employer's time or resources;

(e) personal conduct or concealment of information about one's conduct, that creates a vulnerability to exploitation, manipulation, or duress, such as (1) engaging in activities which, if known, may affect the person's personal, professional, or community standing, or (2) while in another country, engaging in any activity that is illegal in that country or that is legal in that country but illegal in the United States and may serve as a basis for exploitation or pressure by the foreign security or intelligence service or other group;

(f) violation of a written or recorded commitment made by the individual to the employer as a condition of employment;

(g) association with persons involved in criminal activity.

**17. Conditions that could mitigate security concerns include:**

(a) the individual made prompt, good-faith efforts to correct the omission, concealment, or falsification before being confronted with the facts;

(b) the refusal or failure to cooperate, omission, or concealment was caused or significantly contributed to by improper or inadequate advice of authorized personnel or legal counsel advising or instructing the individual specifically concerning the security clearance process. Upon being made aware of the requirement to cooperate or provide the information, the individual cooperated fully and truthfully;

(c) the offense is so minor, or so much time has passed, or the behavior is so infrequent, or it happened under such unique circumstances that it is unlikely to recur and does not cast doubt on the individual's reliability, trustworthiness, or good judgment;

(d) the individual has acknowledged the behavior and obtained counseling to change the behavior or taken other positive steps to alleviate the stressors, circumstances, or factors that caused untrustworthy, unreliable, or other inappropriate behavior, and such behavior is unlikely to recur;

(e) the individual has taken positive steps to reduce or eliminate vulnerability to exploitation, manipulation, or duress;

(f) association with persons involved in criminal activities has ceased or occurs under circumstances that do not cast doubt upon the individual's reliability, trustworthiness, judgment, or willingness to comply with rules and regulations.

**Guideline F:   
Financial Considerations**

**18. The Concern.**Failure or inability to live within one's means, satisfy debts, and meet financial obligations may indicate poor self-control, lack of judgment, or unwillingness to abide by rules and regulations, all of which can raise questions about an individual's reliability, trustworthiness and ability to protect classified information. An individual who is financially overextended is at risk of having to engage in illegal acts to generate funds. Compulsive gambling is a concern as it may lead to financial crimes including espionage. Affluence that cannot be explained by known sources of income is also a security concern. It may indicate proceeds from financially profitable criminal acts.

**19. Conditions that could raise a security concern and may be disqualifying include:**

(a) inability or unwillingness to satisfy debts;

(b) indebtedness caused by frivolous or irresponsible spending and the absence of any evidence of willingness or intent to pay the debt or establish a realistic plan to pay the debt.

(c) a history of not meeting financial obligations;

(d) deceptive or illegal financial practices such as embezzlement, employee theft, check fraud, income tax evasion, expense account fraud, filing deceptive loan statements, and other intentional financial breaches of trust;

(e) consistent spending beyond one's means, which may be indicated by excessive indebtedness, significant negative cash flow, high debt-to-income ratio, and/or other financial analysis;

(f) financial problems that are linked to drug abuse, alcoholism, gambling problems, or other issues of security concern.

(g) failure to file annual Federal, state, or local income tax returns as required or the fraudulent filing of the same;

(h) unexplained affluence, as shown by a lifestyle or standard of living, increase in net worth, or money transfers that cannot be explained by subject's known legal sources of income;

(i) compulsive or addictive gambling as indicated by an unsuccessful attempt to stop gambling, "chasing losses" (i.e. increasing the bets or returning another day in an effort to get even), concealment of gambling losses, borrowing money to fund gambling or pay gambling debts, family conflict or other problems caused by gambling.

**20. Conditions that could mitigate security concerns include:**

(a) the behavior happened so long ago, was so infrequent, or occurred under such circumstances that it is unlikely to recur and does not cast doubt on the individual's current reliability, trustworthiness, or good judgment;

(b) the conditions that resulted in the financial problem were largely beyond the person's control (e.g. loss of employment, a business downturn, unexpected medical emergency, or a death, divorce or separation), and the individual acted responsibly under the circumstances;

(c) the person has received or is receiving counseling for the problem and/or there are clear indications that the problem is being resolved or is under control;

(d) the individual initiated a good-faith effort to repay overdue creditors or otherwise resolve debts;

(e) the individual has a reasonable basis to dispute the legitimacy of the past-due debt which is the cause of the problem and provides documented proof to substantiate the basis of the dispute or provides evidence of actions to resolve the issue;

(f) the affluence resulted from a legal source of income.

**Guideline G:   
Alcohol Consumption**

**21. The Concern.** Excessive alcohol consumption often leads to the exercise of questionable judgment or the failure to control impulses, and can raise questions about an individual's reliability and trustworthiness. 

**22. Conditions that could raise a security concern and may be disqualifying include:**

(a) alcohol-related incidents away from work, such as driving while under the influence, fighting, child or spouse abuse, disturbing the peace, or other incidents of concern, regardless of whether the individual is diagnosed as an alcohol abuser or alcohol dependent;

(b) alcohol-related incidents at work, such as reporting for work or duty in an intoxicated or impaired condition, or drinking on the job, regardless of whether the individual is diagnosed as an alcohol abuser or alcohol dependent;

(c) habitual or binge consumption of alcohol to the point of impaired judgment, regardless of whether the individual is diagnosed as an alcohol abuser or alcohol dependent;

(d) diagnosis by a duly qualified medical professional (e.g., physician, clinical psychologist, or psychiatrist) of alcohol abuse or alcohol dependence;

(e) evaluation of alcohol abuse or alcohol dependence by a licensed clinical social worker who is a staff member of a recognized alcohol treatment program;

(f) relapse after diagnosis of alcohol abuse or dependence and completion of an alcohol rehabilitation program;

(g) failure to follow any court order regarding alcohol education, evaluation, treatment, or abstinence.

**23. Conditions that could mitigate security concerns include:**

(a) so much time has passed, or the behavior was so infrequent, or it happened under such unusual circumstances that it is unlikely to recur or does not cast doubt on the individual's current reliability, trustworthiness, or good judgment;

(b) the individual acknowledges his or her alcoholism or issues of alcohol abuse, provides evidence of actions taken to overcome this problem, and has established a pattern of abstinence (if alcohol dependent) or responsible use (if an alcohol abuser);

(c) the individual is a current employee who is participating in a counseling or treatment program, has no history of previous treatment and relapse, and is making satisfactory progress;

(d) the individual has successfully completed inpatient or outpatient counseling or rehabilitation along with any required aftercare, has demonstrated a clear and established pattern of modified consumption or abstinence in accordance with treatment recommendations, such as participation in meetings of Alcoholics Anonymous or a similar organization and has received a favorable prognosis by a duly qualified medical professional or a licensed clinical social worker who is a staff member of a recognized alcohol treatment program.

**Guideline H:   
Drug Involvement**

**24. The Concern.** Use of an illegal drug or misuse of a prescription drug can raise questions about an individual's reliability and trustworthiness, both because it may impair judgment and because it raises questions about a person's ability or willingness to comply with laws, rules, and regulations. 

(a) Drugs are defined as mood and behavior altering substances, and include:

(1) Drugs, materials, and other chemical compounds identified and listed in the Controlled Substances Act of 1970, as amended (e.g., marijuana or cannabis, depressants, narcotics, stimulants, and hallucinogens), and (2) inhalants and other similar substances;

(b) drug abuse is the illegal use of a drug or use of a legal drug in a manner that deviates from approved medical direction.

**25. Conditions that could raise a security concern and may be disqualifying include:**

(a) Any drug abuse (see above definition);

(b) testing positive for illegal drug use;

(c) illegal drug possession, including cultivation, processing, manufacture, purchase, sale, or distribution; or possession of drug paraphernalia;

(d) diagnosis by a duly qualified medical professional (e.g., physician, clinical psychologist, or psychiatrist) of drug abuse or drug dependence;

(e) evaluation of drug abuse or drug dependence by a licensed clinical social worker who is a staff member of a recognized drug treatment program;

(f) failure to successfully complete a drug treatment program prescribed by a duly qualified medical professional;

(g) any illegal drug use after being granted a security clearance;

(h) expressed intent to continue illegal drug use, or failure to clearly and convincingly commit to discontinue drug use.

**26. Conditions that could mitigate security concerns include:**

(a) the behavior happened so long ago, was so infrequent, or happened under such circumstances that it is unlikely to recur or does not cast doubt on the individual's current reliability, trustworthiness, or good judgment;

(b) a demonstrated intent not to abuse any drugs in the future, such as:

(1) dissociation from drug-using associates and contacts;

(2) changing or avoiding the environment where drugs were used;

(3) an appropriate period of abstinence;

(4) a signed statement of intent with automatic revocation of clearance for any violation;

(c) abuse of prescription drugs was after a severe or prolonged illness during which these drugs were prescribed, and abuse has since ended;

(d) satisfactory completion of a prescribed drug treatment program, including but not limited to rehabilitation and aftercare requirements, without recurrence of abuse, and a favorable prognosis by a duly qualified medical professional.

**Guideline I:   
Psychological Conditions**

**27. The Concern.** Certain emotional, mental, and personality conditions can impair judgment, reliability, or trustworthiness. A formal diagnosis of a disorder is not required for there to be a concern under this guideline. A duly qualified mental health professional (e.g., clinical psychologist or psychiatrist) employed by, or acceptable to and approved by the U.S. Government, should be consulted when evaluating potentially disqualifying and mitigating information under this guideline. No negative inference concerning the standards in this Guideline may be raised solely on the basis of seeking mental health counseling. 

**28. Conditions that could raise a security concern and may be disqualifying include:**

(a) behavior that casts doubt on an individual's judgment, reliability, or trustworthiness that is not covered under any other guideline, including but not limited to emotionally unstable, irresponsible, dysfunctional, violent, paranoid, or bizarre behavior;

(b) an opinion by a duly qualified mental health professional that the individual has a condition not covered under any other guideline that may impair judgment, reliability, or trustworthiness;

(c) the individual has failed to follow treatment advice related to a diagnosed emotional, mental, or personality condition, e.g. failure to take prescribed medication.

**29. Conditions that could mitigate security concerns include:**

(a) the identified condition is readily controllable with treatment, and the individual has demonstrated ongoing and consistent compliance with the treatment plan;

(b) the individual has voluntarily entered a counseling or treatment program for a condition that is amenable to treatment, and the individual is currently receiving counseling or treatment with a favorable prognosis by a duly qualified mental health professional;

(c) recent opinion by a duly qualified mental health professional employed by, or acceptable to and approved by the U.S. Government that an individual's previous condition is under control or in remission, and has a low probability of recurrence or exacerbation;

(d) the past emotional instability was a temporary condition (e.g., one caused by a death, illness, or marital breakup), the situation has been resolved, and the individual no longer shows indications of emotional instability;

(e) there is no indication of a current problem.

**Guideline J:  
Criminal Conduct**

**30. The Concern.** Criminal activity creates doubt about a person's judgment, reliability and trustworthiness. By its very nature, it calls into question a person's ability or willingness to comply with laws, rules and regulations. 

**31. Conditions that could raise a security concern and may be disqualifying include:**

(a) a single serious crime or multiple lesser offenses;

(b) discharge or dismissal from the Armed Forces under dishonorable conditions;

(c) allegation or admission of criminal conduct, regardless of whether the person was formally charged, formally prosecuted or convicted;

(d) individual is currently on parole or probation;

(e) violation of parole or probation, or failure to complete a court-mandated rehabilitation program.

**32. Conditions that could mitigate security concerns include:**

(a) so much time has elapsed since the criminal behavior happened, or it happened under such unusual circumstances that it is unlikely to recur or does not cast doubt on the individual's reliability, trustworthiness, or good judgment;

(b) the person was pressured or coerced into committing the act and those pressures are no longer present in the person's life;

(c) evidence that the person did not commit the offense;

(d) there is evidence of successful rehabilitation; including but not limited to the passage of time without recurrence of criminal activity, remorse or restitution, job training or higher education, good employment record, or constructive community involvement.

**Guideline K:   
Handling Protected Information**

**33. The Concern.**Deliberate or negligent failure to comply with rules and regulations for protecting classified or other sensitive information raises doubt about an individual's trustworthiness, judgment, reliability, or willingness and ability to safeguard such information, and is a serious security concern. 

**34. Conditions that could raise a security concern and may be disqualifying include:**

(a) deliberate or negligent disclosure of classified or other protected information to unauthorized persons, including but not limited to personal or business contacts, to the media, or to persons present at seminars, meetings, or conferences;

(b) collecting or storing classified or other protected information in any unauthorized location;

(c) loading, drafting, editing, modifying, storing, transmitting, or otherwise handling classified reports, data, or other information on any unapproved equipment including but not limited to any typewriter, word processor, or computer hardware, software, drive, system, gameboard, handheld, "palm" or pocket device or other adjunct equipment;

(d) inappropriate efforts to obtain or view classified or other protected information outside one's need to know;

(e) copying classified or other protected information in a manner designed to conceal or remove classification or other document control markings;

(f) viewing or downloading information from a secure system when the information is beyond the individual's need to know;

(g) any failure to comply with rules for the protection of classified or other sensitive information;

(h) negligence or lax security habits that persist despite counseling by management;

(i) failure to comply with rules or regulations that results in damage to the National Security, regardless of whether it was deliberate or negligent.

**35. Conditions that could mitigate security concerns include:**

(a) so much time has elapsed since the behavior, or it happened so infrequently or under such unusual circumstances that it is unlikely to recur or does not cast doubt on the individual's current reliability, trustworthiness, or good judgment;

(b) the individual responded favorably to counseling or remedial security training and now demonstrates a positive attitude toward the discharge of security responsibilities;

(c) the security violations were due to improper or inadequate training.

**Guideline L:  
Outside Activities**

**36. The Concern.** Involvement in certain types of outside employment or activities is of security concern if it poses a conflict of interest with an individual's security responsibilities and could create an increased risk of unauthorized disclosure of classified information. 

**37. Conditions that could raise a security concern and may be disqualifying include:**

(a) any employment or service, whether compensated or volunteer, with:

(1) the government of a foreign country;

(2) any foreign national, organization, or other entity;

(3) a representative of any foreign interest;

(4) any foreign, domestic, or international organization or person engaged in analysis, discussion, or publication of material on intelligence, defense, foreign affairs, or protected technology;

(b) failure to report or fully disclose an outside activity when this is required.

**38. Conditions that could mitigate security concerns include:**

(a) evaluation of the outside employment or activity by the appropriate security or counterintelligence office indicates that it does not pose a conflict with an individual's security responsibilities or with the national security interests of the United States;

(b) the individual terminates the employment or discontinued the activity upon being notified that it was in conflict with his or her security responsibilities.

**Guideline M:   
Use of Information Technology Systems**

**39. The Concern.** Noncompliance with rules, procedures, guidelines or regulations pertaining to information technology systems may raise security concerns about an individual's reliability and trustworthiness, calling into question the willingness or ability to properly protect sensitive systems, networks, and information. Information Technology Systems include all related computer hardware, software, firmware, and data used for the communication, transmission, processing, manipulation, storage, or protection of information. 

**40. Conditions that could raise a security concern and may be disqualifying include:**

(a) illegal or unauthorized entry into any information technology system or component thereof;

(b) illegal or unauthorized modification, destruction, manipulation or denial of access to information, software, firmware, or hardware in an information technology system;

(c) use of any information technology system to gain unauthorized access to another system or to a compartmented area within the same system;

(d) downloading, storing, or transmitting classified information on or to any unauthorized software, hardware, or information technology system;

(e) unauthorized use of a government or other information technology system;

(f) introduction, removal, or duplication of hardware, firmware, software, or media to or from any information technology system without authorization, when prohibited by rules, procedures, guidelines or regulations.

(g) negligence or lax security habits in handling information technology that persist despite counseling by management;

(h) any misuse of information technology, whether deliberate or negligent, that results in damage to the national security.

**41. Conditions that could mitigate security concerns include:**

(a) so much time has elapsed since the behavior happened, or it happened under such unusual circumstances, that it is unlikely to recur or does not cast doubt on the individual's reliability, trustworthiness, or good judgment;

(b) the misuse was minor and done only in the interest of organizational efficiency and effectiveness, such as letting another person use one's password or computer when no other timely alternative was readily available;

(c) the conduct was unintentional or inadvertent and was followed by a prompt, good-faith effort to correct the situation and by notification of supervisor.

##### Appendix B:

Security\_Appeals database data dictionary for Main table

|  |  |  |
| --- | --- | --- |
| Field Name | Data Type | Description |
| ID | AutoNumber | ID number for the record, auto-generated |
| Case\_Number | Short Text | The case number of the adjudication appeal |
| Keywords | Short Text | Keywords associated with the guidelines that is present in the case |
| Appeal\_Date | Date/Time | Date of the appeal |
| Female | Yes/No | Gender of the applicant |
| Position\_Eligibility | Yes/No | If Applicant is attempting to get Position of Trust / ADP position as opposed to Clearance |
| Judgment | Long Text | Short summary of the appeals case |
| Age | Number | Age at time of Appeal Date |
| Occupation | Short Text | Job title of the applicant |
| Recency | Short Text | When a judgment of "too soon" / "too recent" / "ended only" is given, list the recency of the behavior in question |
| Smith | Yes/No | Does Smith Amendement 10 USC 986 apply - more than 12 months in prison, not eligible for clearance |
| No\_Falsification | Yes/No | No allegations or issues of falsification on clearance documents / in interviews raised |
| Rebut\_Falsification | Yes/No | Successfully rebutted, denied, or challenged accusations of falsification |
| Falsification(s) | Yes/No | Applicant made intentional falsifications or deliberate ommissions |
| WPV\_Insider | Short Text | Was the applicant an insider that committed an act of workplace violence |
| Country\_Concern | Short Text | Countries of concern |
| Decision\_Comment | Short Text | Comments about the decision of the appeals case |
| Domestic\_Violence | Yes/No | Applicant perpetrated Domestic Violence |
| Previous\_Clearance | Yes/No | Applicant had a previous security clearance |
| Traumatic\_Life\_Event | Yes/No | Contentious Divorce, Death, Illness, Victim of a crime, Industry downturns, Financial downturns (nationwide mortgage crisis), etc. |
| Caused\_Death | Yes/No | Applicant committed criminal offense resulting in death |
| Child\_Sexual\_Abuse | Yes/No | Applicant perpetrated child sexual abuse |
| Child\_Pornography | Yes/No | Applicant had child pornography |
| Prostitutes | Yes/No | Applicant sought out prostitutes |
| Fmr\_Military\_LawE | Yes/No | If Applicant has Military service record or is Former Law Enforcement |
| Adverse\_Affirmed | Yes/No | Affirmation was not upheld |
| Favorable\_Affirmed | Yes/No | Affirmation was upheld |
| Denied | Yes/No | Applicant was denied a security clearance |
| Granted | Yes/No | Applicant was granted a security clearance |
| Failed\_to\_Mitigate | Yes/No | Applicant failed to mitigate recommendations |
| Success\_to\_Mitigate | Yes/No | Applicant successfully mitigated recommendations |
| Adverse\_Reversed | Yes/No | Adverse outcome was reversed |
| Revoked\_Fav\_Reversed | Yes/No | Adverse outcome was favorably remanded |
| Adverse\_Remanded | Yes/No | Adverse outcome was remanded |
| Favorable\_Remanded | Yes/No | Case was favorably remanded |
| Remanded\_wInstructions | Yes/No | Case was remanded with specific instructions |
| Recommend\_Waiver | Yes/No | A waiver was recommended |
| Decision\_Other | Yes/No | Other decision was reached |
| Descision\_Unknown | Yes/No | Decision was unknown |
| Security\_Violations | Yes/No | Security Violations - Guideline A |
| Foreign\_Influence | Yes/No | Foreign Influence - Guideline B |
| Foreign\_Preference | Yes/No | Foreign Preference - Guideline C |
| Sexual\_Behavior | Yes/No | Sexual Behavior - Guideline D |
| Personal\_Conduct | Yes/No | Personal Conduct - Guideline E |
| Financial | Yes/No | Financial Considerations - Guideline Code F |
| Alcohol | Yes/No | Alcohol Consumption - Guideline G |
| Drugs | Yes/No | Drug Involvement - Guideline H |
| Emotional\_Mental | Yes/No | Emotional / Mental - Guideline I |
| Criminal\_Conduct | Yes/No | Criminal Conduct - Guideline J |
| Handling\_PI | Yes/No | Handling Protected Information - Guideline K |
| Outside\_Activities | Yes/No | Outside Activities - Guideline L |
| Use\_InfoSys | Yes/No | Use of Information Technologies Systems - Guideline M |
| Appeal\_Record | Attachment | Record for the appeal |
| Deception | Yes/No | Was deception used |
| CAC | Yes/No | Applicant had a CAC card issued to them |
| Unknown\_Guideline | Yes/No | Guideline was unknown |

1. Taken from: Department of State, "Adjudicative Guidelines for Determining Eligibility for Access to Classified Information", 2006. Available: https://www.state.gov/m/ds/clearances/60321.htm [↑](#footnote-ref-1)