OTIS Helpdesk Performance Data Review: 2023 - 2025 Cherwell Project

OTIS Student Helpdesk

Kunal Biswas, Ryan Tran

July 25, 2025

TABLE OF CONTENTS

Executive Summary

With transition to ServiceNow, the current onboarding and documentation is either outdated or soon to be. Additionally, our current state of documentation for the student helpdesk is unorganized and inconsistent, many documents being scattered around Teams, shared by older help desk associates (which sometimes is access restricted), or outright found through word of mouth around the office.

By means of this, we wanted to focus on how particularly the helpdesk could improve on this, through means of finding tickets only handled by student associates, ranging from 2023 – 2025 (post-covid). Being the most tedious part of our study, we utilized Cherwell, SQL, and MS Excel to filter and polish our data. After, we built visuals using PowerBI to seek patterns and find potential areas of improvement for student associates.

Following, we found categories with the highest ticket frequency, slowest resolution time, and any other potential bottlenecks to find potential areas of improvements. For example, Outlook and desktop related problems are sent to the student help desk at a high frequency and due to lack of guidelines, causes the student help desk to spend an alarming amount of time. Using this, we wanted to tailor the best solution to truly narrow our scope of our recommendation.

Considering this, testimonials from full time staff (previous student associates), and our own experiences, the best recommendation after further review is to implement a dynamic training handbook for the student helpdesk within Microsoft Teams. Though a self-help Sharepoint exists already, we want this to be consistently updated to handle more current tickets. This would be perfect for new students and still be essential for current, acting as a student associate's best friend. Adding on, It would provide a route that is much easier accessible than the training modules now, and be organized in a manner much more understandable.

Problem Statement

The student associate service catalog for the OTIS Help Desk is unstructured and because of this, there are a number of categories that are under-supported, resulting in breaches on miscellaneous tickets.

Methodology

Cherwell Data Exporting:

Using the Cherwell database, we were able to gather 17,315 tickets from January 2023 to June 2025 (currently). To omit tickets that are meant to be handled by full time staff or other departments, we made sure to filter by the OTIS help desk. Then, we filtered the data to include identifiers for each record and respected opening and closing date to determine if it was breached (Figure 1).

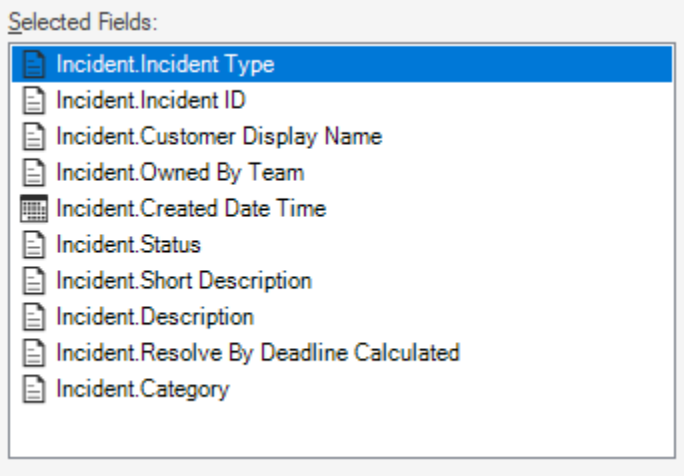


Figure 1: The specific fields exported for our research, customer names and ticket contents not displayed publicly for privacy purposes (Cherwell)

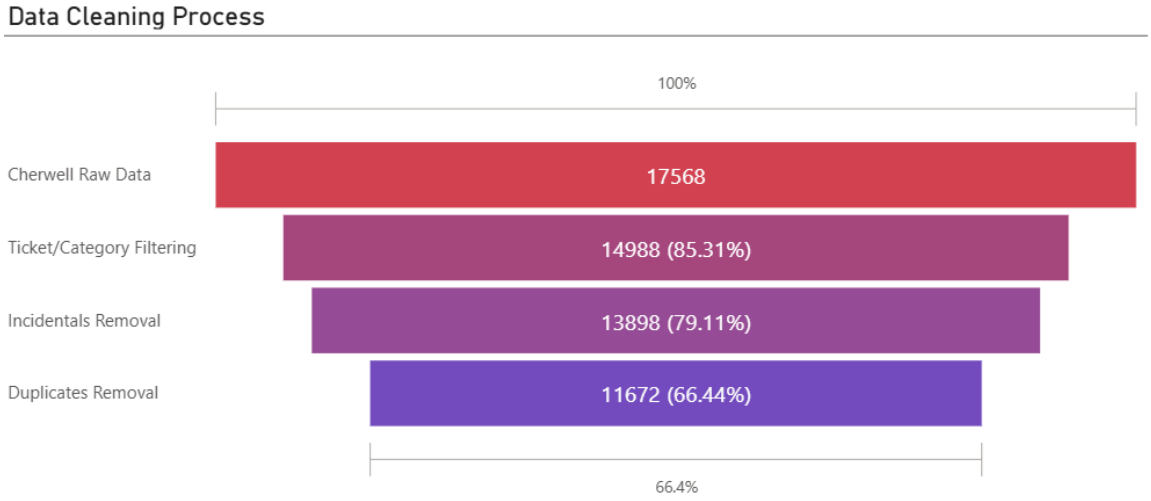
Clean/Sorting Process:

After scraping the data, we filtered cases through Microsoft Excel to discard tickets that were pending, in progress, or assigned. 105 voicemails without classification were discarded in order to save time and so were ~100 cases in which the clients never responded. We removed the category Security Consulting and Education, which generated automated tickets that were handled by FTE. Looking at the

data, we noticed that there were 400~ tickets with incomplete category rows*. Because of this, we utilized AI for time purposes to auto-sort the ticket's classification by its short description and title.

Redundant Data:

The next step involved identifying and removing duplicate and incidental tickets. Using Cherwell's search filters, we generated two separate tables— one for duplicates and another for incidental entries. These reference tables allowed us to efficiently cross-check and eliminate those specific ticket records from the master dataset using SQL queries. This ensured that the final table reflected only unique, relevant cases handled by the OTIS Help Desk.



Building Visualizations:

Using our refined database, we decided to measure the frequency of tickets by category. By doing so, we could observe cases most relevant to the OTIS help desk. We also visualized time spent to resolve incidents among their respective categories. This was paramount to understanding how training within the OTIS help desk could be improved. However, we found that there were several categories which were composed of such minute amounts of cases over the years. This meant that although the OTIS help desk had taken significant time to handle those requests, the frequency in which they arrived to the team was

negligible. Because of this, we grouped categories in which the team had seen less than 100 cases over the duration of the respective time period as “other.”

To further strengthen our findings, we accommodated seasonal trends. The significance of this was to observe whether the time taken to complete a ticket was being influenced by factors greater than just their respective categories.

Findings

What Categories Should We Keep Our Eye On?

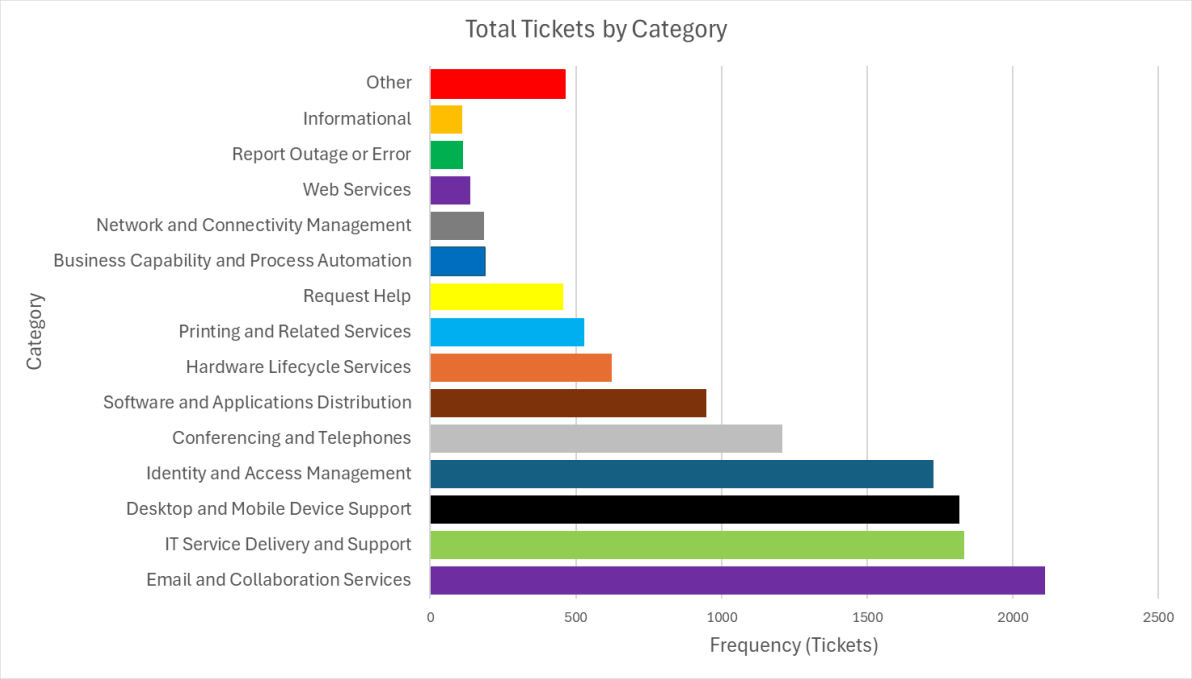


Figure 2: This model illustrates total tickets submitted to the helpdesk by category.

In Figure 1, we observe that most tickets submitted were regarding Outlook and Teams issues with IT Service Delivery (general issues such as login, meet and greets, etc.) and desktop and mobile support (hardware/software issues) coming in respective second and third. After looking further into what type of tickets the top five were, we found that tickets submitted to the helpdesk all mostly involved Microsoft/work-related app issues.

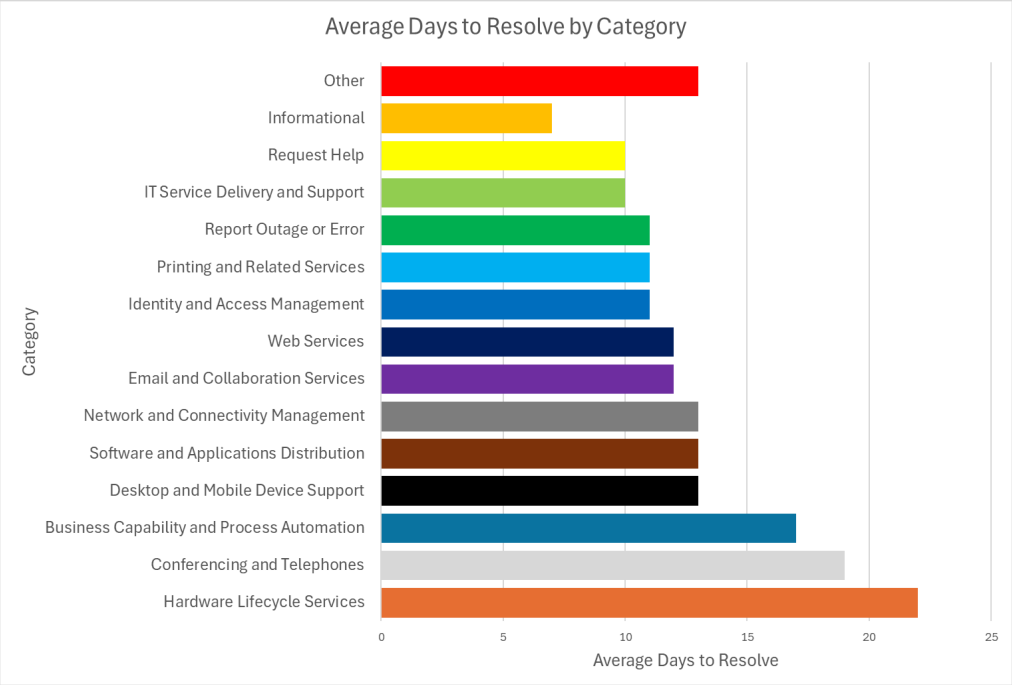


Figure 3: This model illustrates the average days to resolve by category.

Figure 3 illustrates that although the help desk receives a high amount of tickets from certain categories (i.e. IT Service Delivery and Support, Email and Collaboration Services), after further review, they are not to be prioritized when it comes to training. These do not have much time spent on them, being low-hanging frequent and fast tickets. Hardware Lifecycle Services happens to be the most troubling category of tickets for students when considering time spent. Examining further, we can attribute some of those cases to computer refreshes, impacted by delays related to purchasing requests.

Moving on, tickets under Conferencing and Telephones, takes an average of 19 days for the OTIS help desk which may raise concern. However, the high number of days can be explained by tickets which are placed referencing a future date in which conference support is needed (ex: can be submitted 2-3 weeks in advance). With that being said, there is still a real benefit to improving training for this category as the OTIS help desk has a difficult time handling tickets in meeting rooms. There is insufficient training documentation in PeopleSoft, and frequently, protocol is spread through word-of-mouth which is inadequate long-term.

The most concerning category is Desktop and Mobile Device Support which takes the OTIS help desk an average of 13 days to solve. It also is the third most frequent category of ticket that the help desk receives. We found that issues in this category were both diverse and isolated. Many of these are traditional IT tickets (i.e. bugs, errors, etc.) that require outside research, implementing updated documentation on how to approach the ticket would provide great benefit to new associates.

Does Seasonality Affect Resolving Time?

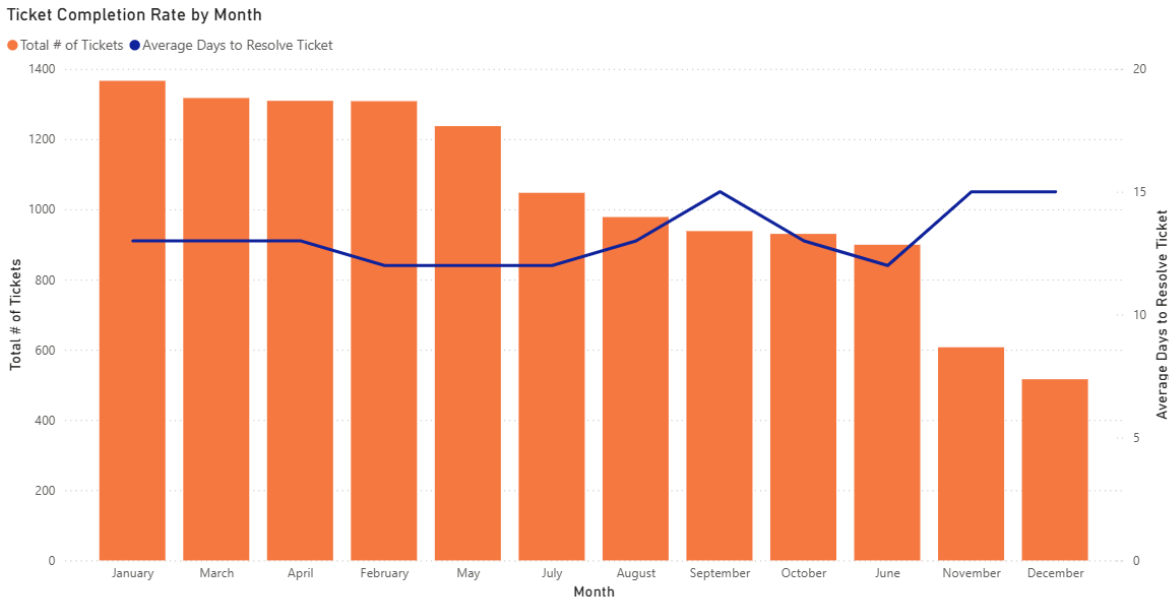


Figure 4: This model visualizes the trend in time taken to complete all tickets based on the respective month they were created in.

When using time as a factor for determining how training can be improved, it's important that we consider confounding variables such as seasonality. Most months appear stagnant, however there is a small peak in time taken to resolve tickets around September. This anomaly can be explained by the new interns that are hired around this time. Due to the lack of experience, they spend a longer duration, skewing the overall trend.

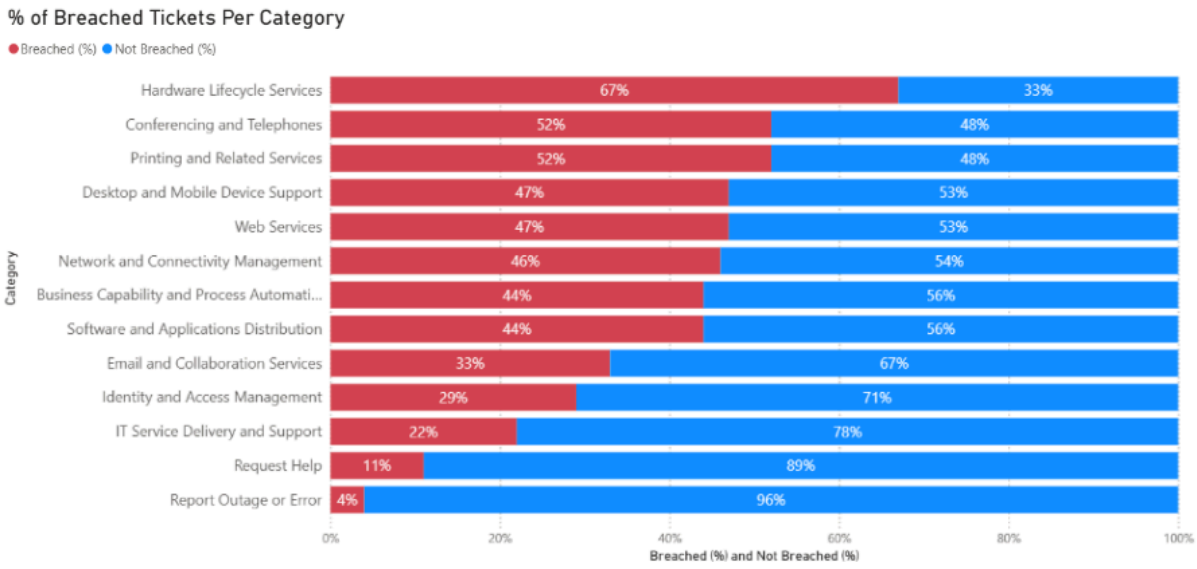


Figure 5: This model illustrates the % of breached tickets respective to each category.

Outside of using days spent to finish certain tickets as a benchmark, looking at the percentage of tickets breached, we observe most categories on average are breached half the time. A point of concern observed is in Hardware Lifecycle Services, having an abnormal 67% breach rate. We found that within this category, this is due to computer refreshes, most tickets become breached due to purchasing requests (delay by vendor) being later than the SLA deadline and priority being incorrectly classified (Resolve by Deadline being wrong). However, understanding this visual on a broader end, we want to improve the help desk's breach rate, providing proper documentation can help decrease the breached percentage.

Recommendations

With a new batch of students every semester, our recommendation is to implement dynamic training documentation as a recurring project for the OTIS help desk associates. With our findings, we can find our prioritization for “Desktop and Mobile Support”, “Conferencing and Telephones”, and “Hardware and Lifecycle Services”. It would be an embedded SharePoint page within the Teams group. It is to be enforced with semesterly routine checks for changes in processes or additional known workarounds. The documents are to be updated as needed and utilized for routine issues (and can be done

with ease). Documentation should address any case by case scenario if possible and updated when possible.

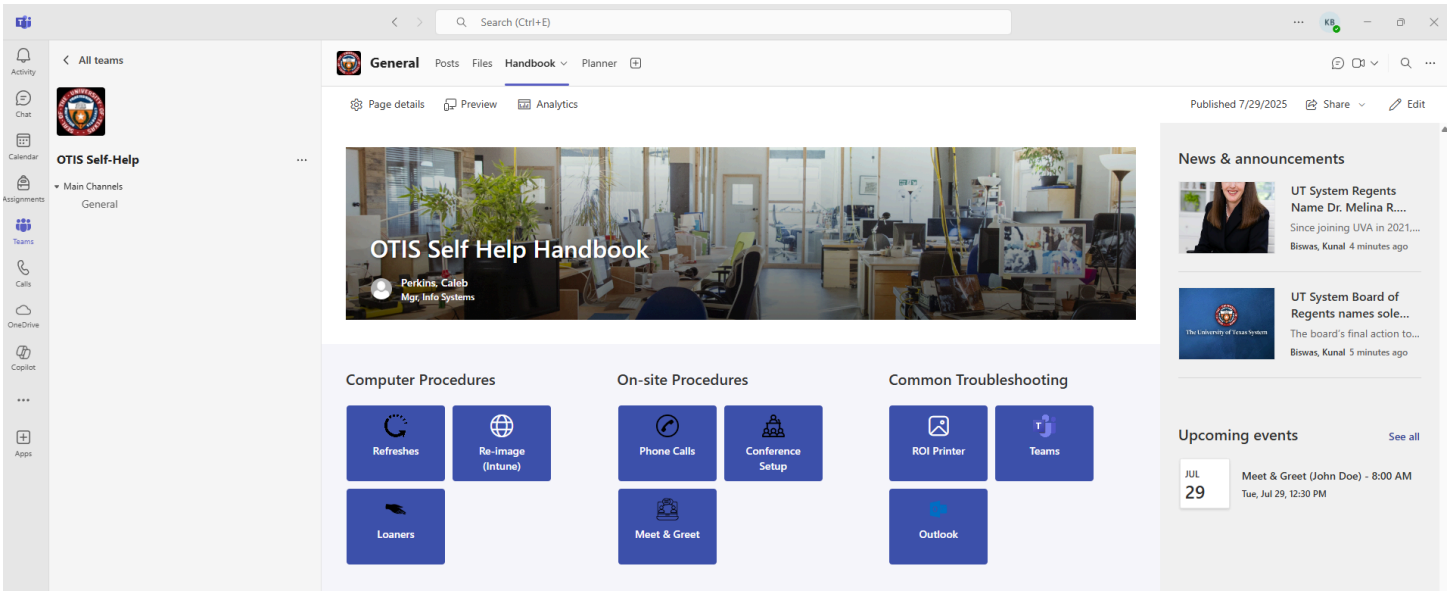


Figure 6: A mockup of the SharePoint dashboard and handbook embedded into the Teams channel, being easily accessible.

Impact and Benefits

There are several benefits to implementing dynamic training documentation. For one, it is able to identify solutions to new and previously addressed problems on a rolling basis. Adding on, students will find it much easier to retrieve documentation (being centralized on Teams within the Sharepoint Page), having more focused skillsets and defined service catalog. Students will have better resources to troubleshoot before having to reach for full time assistance. This, overall, will be better self-paced and will lead to a reduction in breach rate. With transition to ServiceNow, this knowledge base will be vital to new and current help desk associates for recurring tickets.

Risks and Considerations

In the initial stages of the project, our priority was to think about issues that may disrupt or prevent this analysis project from even happening completely before any sort of research and data

collection. To ensure this project was as accurate as possible, we had to be able to address and be aware of all potential factors that may lead to misleading or inaccurate data. We understood that Cherwell is imperfect due to user error and that the data we wanted to work with have to be tickets that can only be done by the student helpdesk.

For starters, when cleaning the data, we removed incidental and duplicate tickets because they provided zero benefit to our analysis and had the possibility to skew the category percentages and MTTR (mean time to resolve).

Looking at this from the helpdesk's end, there was also a note to make that tickets sometimes were forgotten to close until later, not properly set to pending, or incorrectly closed, causing the ticket to become breached. Understanding this, we are aware Cherwell data may have slight errors due to human error and may affect our number of breached tickets (%) and average time to resolve.

We also wanted to consider and make a note that the help desk category for tickets may not be correctly updated, accurate/listed, and the consideration of new categories added later (ex: VPN/SNAC category) that may change the classification's actual/new category. On a broader scale, this will affect the category amounts insignificantly, but it is vital that the audience is aware of these factors.

Additionally, we need to make note that there are several events and certain periods throughout the years that may affect results. System updates such as rolling out the Windows 11 upgrades, account changes, software adjustments, created an influx of tickets which when paired with understaffed FT and student associates, can cause ambiguity in our conclusions. The assumption we are making in this study is that in a broad sense, these changes level out and are not significant to our findings.

Conclusion

In summary, the OTIS Help Desk should implement a dynamic training handbook within Microsoft Teams to give a more concise idea of our service catalog, enhancing accessibility, and streamlining training. Upon implementation, it's expected that student associates should have an easier time handling tickets in categories “Hardware and Lifecycle Services”, “Conferencing and Telephone”, and “Desktop and Mobile Support.” Taking these steps improves overall long term success through reduction of breach rates, more clear documentation, and more focused scope on relevant problems within the help desk

Roles and Responsibilities:

Kunal Biswas: Kunal contributed to drafting the Executive Summary, Methodology, and Recommendations. He evaluated and cleaned the dataset by identifying redundant information, ensuring accuracy and usability for analysis. Leveraging SQL queries, he extracted key metrics to support project findings and assisted in creating data visualizations. Additionally, Kunal helped design and prototype the dynamic training booklet.

Kunal Biswas

Ryan Tran: Ryan was responsible for writing the Findings, Risks and Considerations, Recommendations, and Impact and Benefits section. Aggregating the data, he determined what data was best suited for the project, manually cleaning and leveraging AI and Excel to fix broken entries. Additionally, Ryan assisted in writing SQL queries and the building of Power BI visualizations. To add on, he aided in creating the prototype and Teams SharePoint page.

Ryan Tran

*Full documentation of our data filtering process and research can be found on our Github project as requested