

Introduction:

Trace Labs is a nonprofit organization made up of a community of individuals globally who use OSINT to assist in finding missing persons. Trace Labs has coordinated 35 “search parties” and have assisted with 320 missing persons cases that have not been locked to a particular region. TL Search Parties are considered CTF events which treat information regarding a case as a flag. Points are awarded in the following manner:

FRIENDS / 10 points Relevant information on Friends. This can include but not limited to: <ul style="list-style-type: none">• name• aliases• birthdate• IDs (drivers license, passport, library card, etc)• home address• home phone number• work address• work phone number• email• social media handle (e.g. Facebook, Twitter, etc)• any insightful information from friends's comments	EMPLOYMENT / 15 points Relevant information on Employment. This can include but not limited to: <ul style="list-style-type: none">• business name• aliases• manager name• start date• end date• IDs (badgs, license, etc)• business address• business phone• email• social media• any insightful information from employer's comments
FAMILY / 20 points Relevant information on family. This can include but not limited to: <ul style="list-style-type: none">• name• aliases• birth date• IDs (e.g. drivers license, passport, library card)• home address• home phone number• work address• work phone number• email• social media handle• any insightful information from family's comments	HOME / 25 points Information that is relevant regarding the subject's home. This can include but not limited to: <ul style="list-style-type: none">• address• landlord's name• landlord's phone number• recent accommodations• any meaningful interactions with the landlord• risks in the immediate area (e.g sex offenders)• Habits (e.g. couch surfing)
BASIC SUBJECT INFO / 50 points Basic relevant information regarding subject. This can include but not limited to: <ul style="list-style-type: none">• name• aliases• birth date• pictures• IDs (e.g. drivers license, passport, library card)• emails• social media handles/accounts• blogs or forum profile and relevant posts• personal websites• dating site profiles and relevant posts• Craigslist or Kijiji profile and relevant posts• Reddit accounts or sites of similar nature, online resume and physical description	ADVANCED SUBJECT INFO / 150 points Advanced relevant information regarding the subject. This can include but not limited to: <ul style="list-style-type: none">• unique identifiers (e.g. tattoos, scars, piercings)• medical issues• habits (e.g. smoking, drinking, hitch hiking, hangouts)• previous missing persons history• brand of cell phones• model of cell phones• cell phone carriers• make of vehicles• year of vehicles• color of vehicles• license plate of vehicles• video game handles (e.g. xbox)• IP Address• Any other information about where the subject might be headed
DAY LAST SEEN / 500 points Relevant information regarding the subject's last day seen. This can include but not limited to: <ul style="list-style-type: none">• pictures of subject on day last seen (e.g. CCTV)• details of subject on day last seen (mood, altercations, conversations, etc)• person last seen with• intent to meet with someone• direction of travel• other details that relate to the day last seen	DARK WEB / 1000 points Relevant information found on the dark web about the subject. This can include but not limited to: <ul style="list-style-type: none">• picture or details of subject on sites such as backpage• discussion regarding subject on dark web sites• the sales of goods by the subject on the dark web• any activity or post by the subject on the dark web• password breach data that includes the subject's username
LOCATION / 5000 points Relevant information pertaining to the current location of the subject. This can include but not limited to: new information on location (this does not include a Police update saying the person was found or an obituary - this will get you 150 points and can be under the category Advanced Subject Info.)	

Team & Background:

I participated in the Search Party event held on March 26th, 2022. This was my second Search Party CTF that I have participated in. I originally had a team of four members, however, one member never showed when the event went live. Another team member was unfamiliar with the CTF, as they had never participated in a Search Party before. Unfortunately, I was not in a position to be on a voice call or in person with my teammates, so I was not able to provide this team member much assistance in learning how to navigate the event. The remaining member on the team had participated in the same previous Search Party event that I had.

When the event started, six missing persons cases became available for us to begin researching. The following image depicts a screen capture of the layout of the event (after some flags had been submitted for review by our assigned judge) with the cases we were given.

The screenshot shows a web interface with six case cards arranged in a 2x3 grid. Each card displays a person's name, location, and a 'Days' counter. Below the name, there are three columns: 'Pending', 'Approved', and 'Rejected', each with a count and a 'View' link. At the bottom of each card are two icons: an information icon (i) and a plus icon (+).

Name	Location	Days	Pending	Approved	Rejected
Toeun Ouch	Melbourne, Victoria, Australia	1076 Days	1	8	1
Trent Mckechnie	Bass Hill, NSW, Australia	743 Days	0	0	0
Samuel Allan Segal	Glenbrook NSW Australia - Glenbrook National Park	70 Days	1	0	0
Daniel Robinson	Buckeye, Arizona	276 Days	2	1	1
Pepita Madalyn Redhair	Albuquerque, NM	729 Days	0	1	1
David Holland	Tauranga on North Island, New Zealand	15 Days	0	1	0

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The teammate that had experience with this event chose an individual to focus on during the time period. I originally sought to focus on a sole individual, however, with the lack of a team member (and with the teammate who was new to the event struggling to submit flags) I ended up trying to research three other individuals in addition.

Tools and Approaches:

Since this was an OSINT event, the only tool I used was the internet, however, I did come up with some approaches to try to paint a greater picture about each person. First, I used social media to try to find accounts associated with the individuals. Unfortunately, I could not come up with any personal accounts initially based on name and location searches. I tried Facebook and Instagram, given that those two social media platforms usually state a person's name either in the bio or directly in the handle. Twitter and Reddit were two other platforms that I tried to search, however, users often use screen names or go by a unique handle for these platforms. There is more of a level of anonymity in comparison to the platforms that are run by Meta.

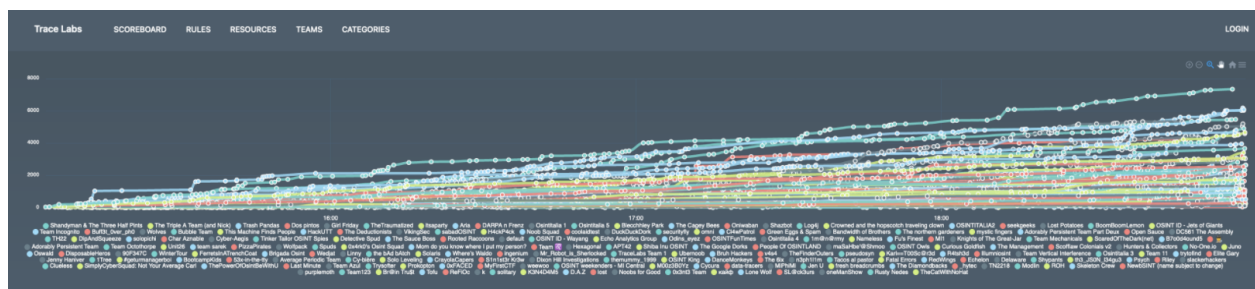
I then tried to find social media accounts for family members, hoping that I might be able to access a friends list that would reveal personal accounts of the missing individuals. I stumbled across a Facebook account for one individual's mother, however, her friends list was not public. I was able to verify this information due to their Facebook posts being open to public view, where I saw her post about her missing child. I submitted this information as a flag. I was also able to locate another individual's sister and father on social media.

Another approach I took was to read up on news articles relating to the missing individuals. Although we cannot submit any information from news articles, they can provide information like direct names of partners, friends, and family members that were not revealed in the case files we were given. This gave potential leads into other individuals I could research. I ended up finding an Instagram account for one of the missing individual's friends/coworkers. The name matched up with one I found in a news article and they had posted around the time that the individual went missing about them. From their following list, I was able to find the account of the individual that I initially could not find when searching for their name on the platform (due to its common nature).

In my research on a particular individual, I was able to find the full police report regarding their disappearance that I believe a family member (or someone related to the case) posted with some redacted information. I considered finding this information a catch-22, as I was given names of individuals, but on the police report, these individuals' phone numbers, social media accounts, addresses, etc. were listed already. This information was redacted, however, I felt as though trying to find these accounts and submit them as flags was going to be futile, and the time allotted (we were given only four hours) could be better spent looking for and submitting other information.

Results and Reflections:

Our team finished 135th out of 187 teams.



Although this placement was not favorable, at the end of the day, this competition was not a “Win or Lose” CTF. The information that all teams provided helped generate reports that will be given to local law enforcement from the areas that these individuals were from. I’m glad that I was able to contribute what I could to such a cause.

Reflecting on the dynamics of the team, I think we were put at a disadvantage when one of our team members dropped out last minute. We were given six individuals to research and we had only three individuals on our team (when other teams who ranked higher than us most likely had four members). Also, with one team member being completely new to the

event, it also disadvantaged the team that we could not all at least be in a voice call with constant communication between us. This might have shed some clarity for this team member, who may have been able to contribute more.

In addition, one dynamic that was perhaps not favorable was that the team member who had prior experience with Search Parties focused on a singular individual. This left five other cases available to me and the new team member. I ended up being the sole contributor to four of these five individuals. I think this in and of itself was daunting, which led to me hopping around a lot. If I was able to have focused on one or two individuals, I feel as though I would have had better flag submissions. The information that I submitted was unfortunately rather basic, but hopefully helpful to some degree in providing validity.

Compared to the other Search Party event, it was actually much more difficult to find surface level information about the individuals that was not already in the reports we were given. There appeared to be a lack of social media presence, which in the previous event helped me find more critical information about the individuals.

Moving Forward:

I plan to continue participating in OSINT events like Trace Labs. I want to try in the future to be less reliant on surface level social media information, as not everyone maintains an internet presence in this way. In the future, I want to be able to comfortably utilize the Dark Web through tools like Tor to bring my OSINT research skills to the next level. All-in-all this was a good experience that taught me the importance of both strong research skills and being a part of a cohesive team.