

# SCDF AI Integration

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A row of social media icons: X, Facebook, Instagram, and LinkedIn, followed by the text "@BrookhavenLab".

# SCDF User Applications

## User facing services:

- New user form, Announcements, SSH Key upload forms, etc
  - All being integrated into a stand alone Flask application
  - Using ChatGPT to update previous code for modernization
  - Collecting all scripts/code and converting to Python for single language development
- Mattermost Chatbot:
  - Using ChatGPT api and user documentation, we will create a chat bot in Mattermost allowing users to quickly get answers to simpler questions
    - “Where do I sign up for an SCDF account?”
    - “How do I access SCDF systems?”
    - “Where do I submit a ticket for X problem?”
      - For something like this it should provide feedback requesting the user to explain the issue and attempting to solve the problem relying on submitting tickets only if all other options are exhausted
  - The chatbot should provide answers to these simple questions and add references from our public documentation for users to solve their problems without the need for staff intervention

# Registration Form

All fields are valid. (Final check passed; API verification pending)

Full Name

Test name

Email

testemail@test.gov

Affiliation

SDCC

Phone Number

1234

Group

SDCC Staff

Preferred Environment

tcsh

Recommended: tcsh

Life Number

12345

ChatGPT 4o

## Flask Form

New chat in this project

+ Search ...

Project files  
4 files



Add Instructions

Tailor the way ChatGPT responds in this project



Chats in this project

Python Basics Reference Chat

create a small table with these instructions for reference, label the table "Starting basics"

Flask WTF Module Error

(venv) → new-user-form-flask git:(main) × 25-04-03 20:07 pip install flask-wtf Requirement already satisfi...

Flask Form Validation

ok lets begin with your steps

463890abc0c7e85-flask-form/project

ChatGPT can make mistakes. OpenAI doesn't use Brookhaven National Lab workspace data to train its models.

Flask Form > Flask Form Validation o3-mini-high

VS PROXY

### Next Steps

Now that we have forms.py ready, the next steps would be:

1. **LDAP Integration Module (ldap\_integration.py):**  
Define functions to query your LDAP server and validate the Life/Guest number and perform name matching.
2. **Training Status Module (training\_status.py):**  
Create a function to query the REST API for CyberSecurity training status.
3. **Email Notification Module (email\_utils.py):**  
Build a module to send emails (e.g., using Flask-Mail or smtplib).
4. **Business Rules Module (business\_rules.py):**  
Port over mapping logic (group-to-GID, environment restrictions, etc.) from the CGI script.
5. **Main Application (app.py):**  
Integrate these modules and use the RegistrationForm to process submissions, query LDAP, check training status, build the submission message, send emails, and log the submission.

Let me know which module you'd like to work on next or if you have any questions about the form module!

Ask anything

+ Search

ChatGPT can make mistakes. OpenAI doesn't use Brookhaven National Lab workspace data to train its models.

# Data & Analysis at SCDF

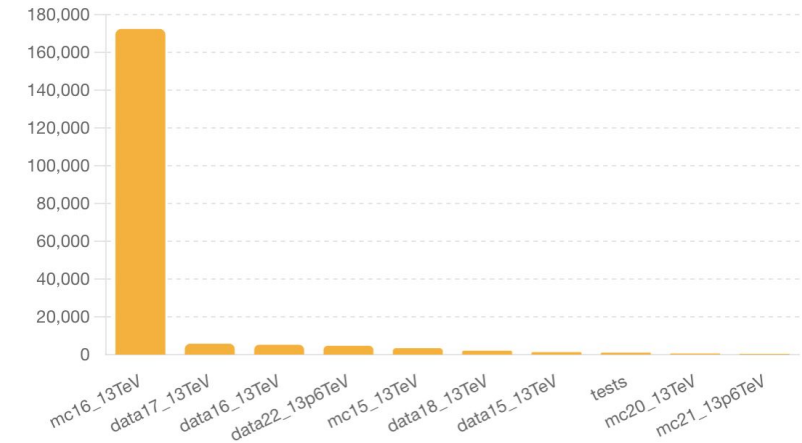
- Analyze and visualize datasets from different data sources like storage billing, HTCondor logs, monitoring, etc
  - Improve operational efficiency
  - Anomaly Detection
  - Resource Optimization
  - Understand user/group behavior trends over time
- Using chatgpt to do the data analysis
  - Explore the hidden patterns
  - Perform statistic and trend analysis
  - Visualize the data in charts
  - Refine the existing data analysis code (LDRD project)

## Access Activity Over Time (Hourly)



## Top 10 Accessed Directories

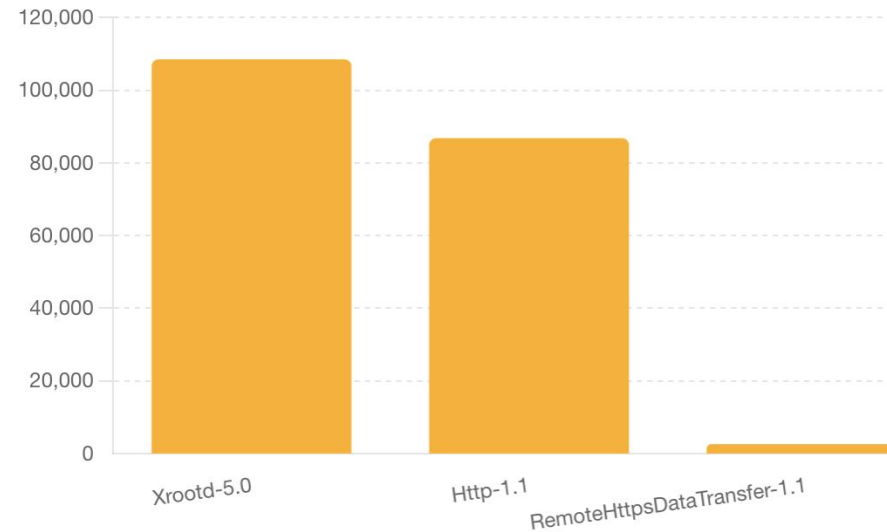
Y Number of Access Requests by X Top-Level Directory



# The use cases on storage operation

## Top 10 Protocols Used

Y Number of Access Requests by X Protocol



## Top 10 Most Frequent Client IPs

Top 10 Most Frequent Client IPs

