Project GAIA

Process Design

2024 Edition

Blueprint of Open-Source Analysis Training

Project GAIA is a student-led project facilitated through the Cyber Analytics and Security Research group (CASR).

The open-source analysis in this publication is produced by our student analysts. The research is nonpartisan and non-proprietary. CASR, Carleton University and our guest speakers do not take specific policy positions. Accordingly, all views, positions, and conclusions expressed in Project GAIA's publications should be understood to be solely those of the author(s).

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Executive Summary

Purpose: This publication is the central planning guide for Project GAIA and an interim report for the upcoming OS conference. It outlines the project's operational design and serves as a preparatory document for the final presentation of findings.

Project Objective: Project GAIA aims to train students in producing high-quality open-source analysis and to document organizational best practices for future initiatives.

Key Highlights:

Organizational Models: Exploration of current and potential future organizational models for experimental purposes.

Experimental Learning: Ongoing guest speaker workshops from diverse fields to enhance student learning.

Artificial Intelligence Integration: Use of AI to automate data collection and improve writing quality.

Smaller Footprint Strategy: Focus on flexibility and minimal logistics to enable consistent production.

Ethics and Mental Health Framework: Establishment of guidelines for ethical conduct and student well-being.

Preparation for Method Evaluation Report: In-depth report scheduled for March 2024 to assess methodologies and project outcomes.

Preface

In October 2023, we embarked on an ambitious journey with Project GAIA. This student-led initiative was conceived with the objective of exploring the potential of nurturing inexperienced students to proficiently conduct open-source analysis, particularly in the realm of global conflicts.

Just three months into its inception, GAIA has rapidly evolved. The cornerstone of our progress lies in the collaborative spirit of our student teams, who have actively engaged in multiple planning sessions. These meetings were crucial in sculpting the trajectory of our project.

Our initial phase employed a journalism-based approach, meticulously crafting our production process. This stage was pivotal in establishing a foundation in journalistic writing, emphasizing the importance of accuracy, language precision, and rigorous fact-checking.

We then delved into the existing OSINT practices adopted by governments and various organizations, which significantly enhanced our understanding and implementation of writing templates. This exploration into established methods yielded valuable insights, streamlining our approach to open-source report production.

In a strategic decision to foster innovation and creativity, we initially refrained from defining a specific audience for our reports. By doing so, our products are not tailored to a “Canadian nexus,” or “Strategic key take-aways” etc. This choice was made to allow maximum creative freedom for our students, encouraging a diverse range of perspectives in their report writing. However, moving forward, we are still exploring the opportunities to align with specific consumers, either academic or organizational.

December marked a significant milestone with the release of our first publication. This inaugural output not only represents the collective effort and dedication of our students but also serves as a foundational experiment in shaping future student-led open-source projects. As we continue on this path, we remain open to refining and adapting our methodologies, driven by the evolving needs and insights gained through our journey.

We extend our profound gratitude to the faculty at the Norman Paterson School of International Affairs for their invaluable mentorship and to the guest speakers from various professional backgrounds who have generously shared their expertise. The support and guidance received from these subject matter experts, though not an official affiliation or endorsement, have been pivotal in the swift and significant strides made by the GAIA Team.

As we embarked on this experimental journey with GAIA, a key focus from the onset was not only on the production of open-source analysis but also on meticulously documenting the process design and methodology. Our aim has been to unravel the dynamics of organizing a student production group and to gauge the effectiveness of training students in crafting quality reports.

Central to our exploration was the efficiency of our production schedule. Working within the constraints of limited resources, particularly time, posed a unique challenge. Our students, diligently engaged in their master's coursework, are balancing academic commitments with their involvement in GAIA. This balancing act necessitated an innovative approach to streamlining our processes and maximizing organizational efficiency.

We underwent several iterations in our organizational structure design, constantly evolving and adapting. Our focus was not only on functional efficiency but also on fostering an environment where individual interests and talents are recognized and nurtured. Dividing our teams in a manner that promotes both personal growth and leadership development has been a cornerstone of our approach.

The purpose of this document is to chronicle the methodology and design of an open-source project. As the ultimate goal of our endeavor is to share our methodological insights – what succeeded and what fell short – with the broader analyst community. This publication serves as an intermediary step in this process, a snapshot of our ongoing journey.

Looking ahead, we are excited to present a more comprehensive report of our methodology findings in March 2024. This final document will encapsulate the full spectrum of our experiences and learnings, contributing to the community of practice in the field and hopefully serving as a valuable resource for similar open-source initiatives in the future.

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Project Manager, Team GAIA
(GAIA:EXCC\C01)

Part 1

Vision

Who we are

We are a student-led analyst group operating through CASR, dedicated to experiment with open-source methods and developing best practices.

Methods

- **Hosting Workshops:** We will invite subject matter experts in OSINT to conduct workshops, enhancing the students' skills and understanding of open-source methodologies.
- **Publishing Open-Source Products Online:** Students' works are published online, serving as both a practical output of their learning and a means to gain recognition in the wider OSINT community.

Business Planning

- **Research Topic Identification:** We will select research topics that align with current academic research to secure faculty support and integration.
- **Government Academic Outreach:** We plan to identify and engage with government academic outreach programs to expand our network of SMEs and resources.
- **Ethics Coordination:** There will be close coordination with the CU Research Ethics Board to ensure adherence to ethical standards in open-source research.

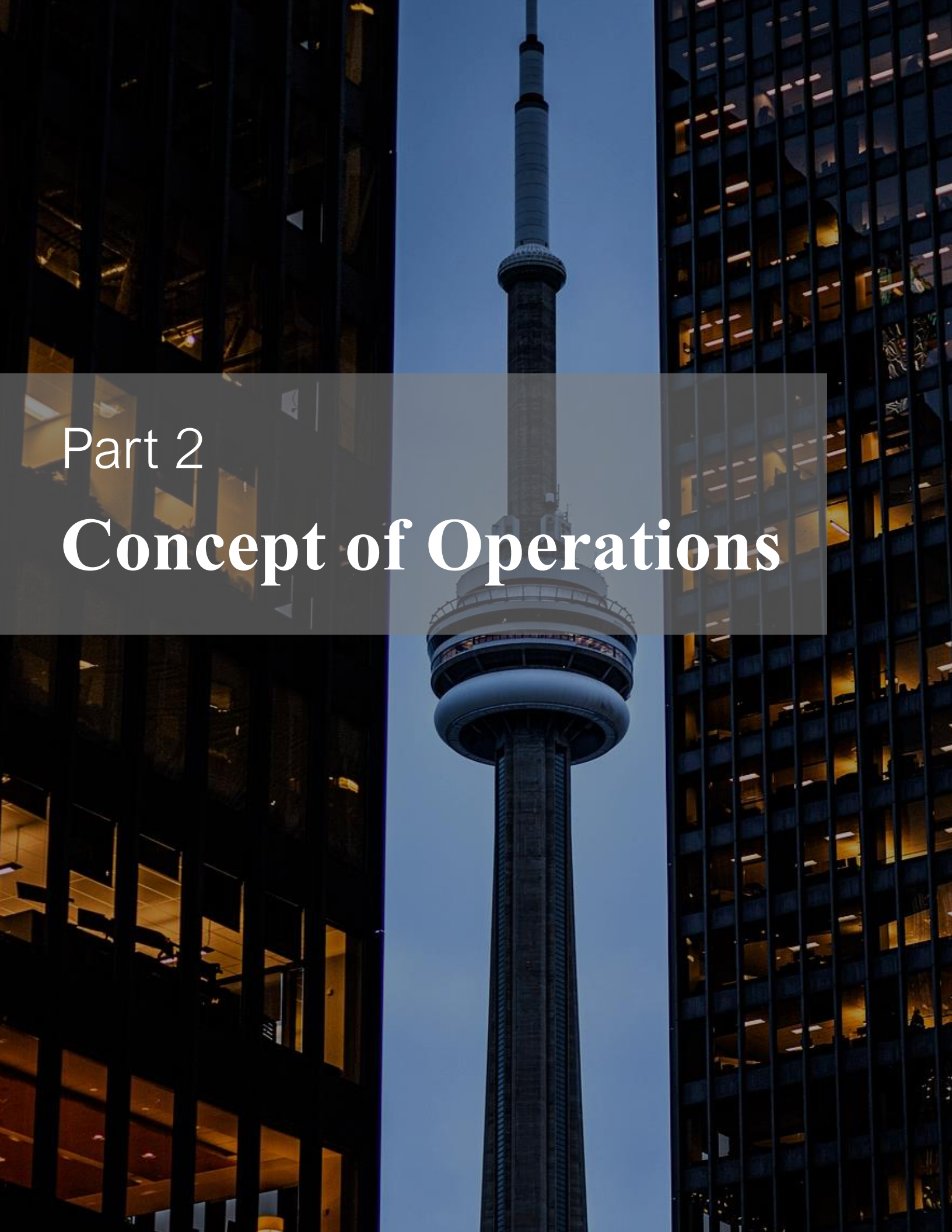
Our Vision

Main objective

Our primary objective is to train graduate students in producing open-source analysis products focused on global conflicts.

End Goal

Our aim to present our findings on the organization and methodology of student-led open-source project at the OS Conference in March 2024, contributing valuable insights and best practices to the broader community.



Part 2

Concept of Operations

Operational Concept Graphic

OV-1

Organizational Structure

GAIA

Management

Special Advisor(s)

(GAIA:EXCC\B09)

Non-executives roles that provide subject matter expertise in certain fields. They can perform in various functions:

- Quality Assurance: Offers consultation on writing direction and techniques to enhance product quality.
- External Reviewing: Provides external perspectives on process design, focusing on production efficiency and ethics.
- Outreach: Connects with external experts beneficial to the project and promotes broader recognition within the community.

Project Manager

(GAIA:EXCC\C01)

Oversees the operations of the production process. They have three primary functions:

- Editor in Chief: Guides student analysts in writing, provides reviews and feedback, suggests necessary revisions, and performs final vetting before publication.
- Workshop Facilitator: Coordinates workshops with guest speakers, aligns student learning needs with workshop themes and speaker expertise.
- Business Planner: Identifies key requirements for student success and coordinates resource allocation through CASR business planning.

Ethics Officer

(GAIA:EXCC\E01-05)

They are crucial to the accountability and integrity of the project. They have two key roles:

- Ethics Compliance: Ensures ethical conduct in open-source analysis, including respect for privacy, non-invasiveness, transparency in collection practices, and adherence to diversity and inclusivity.
- Mental Health Advising: Actively monitors the well-being of student analysts, offering initial support and connecting them with professional resources as needed.

GAIA

Production

Team Lead Editor

(GAIA:TEAM\E01-05)

Non-executives who takes up leadership role of the team on a rotational basis:

- Coordination: Manages topic selection to prevent overlap and pairs individuals with their preferred subjects.
- Recruitment: Actively recruits and integrates new students into the team based on shared interests.
- Mental Health Oversight: Monitors team members' well-being and liaises with the ethics office for support.

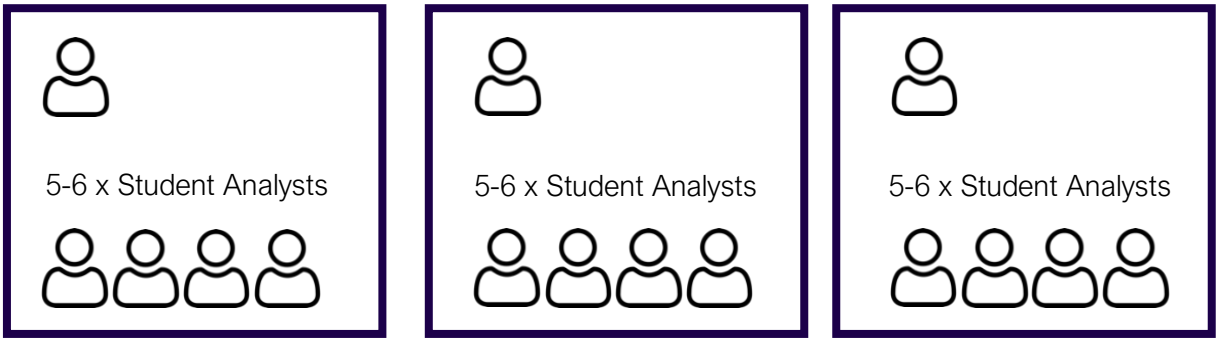
Student Analysts

(GAIA:TEAM\E01-05)

They are the core body of the production process:

- Topic Submission: Choose subjects of interest for research and writing.
- Continuous Improvement: Implement feedback for ongoing enhancements to their work.

3 x Analyst Teams



Production

Team Organization

Initial Phase of Production Experimentation: Regional Team Structure

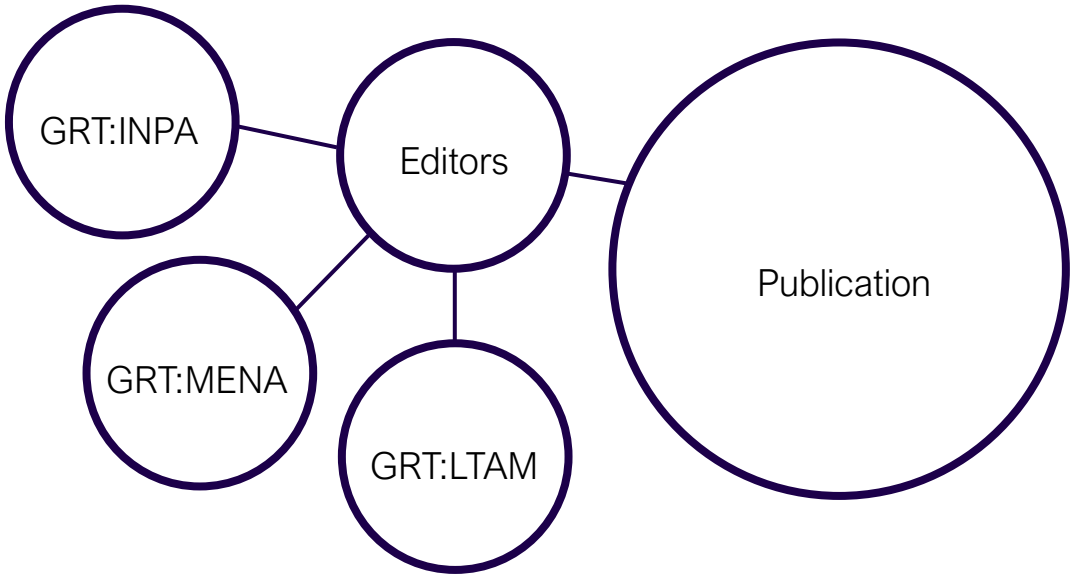
In this first stage of our experimentation, we decided to organize our analysts into teams based on geographical regions, a decision made collectively in one of our first planning meetings. This approach was chosen to align with the students' interests and diverse backgrounds, ranging from diplomacy to economics. Our December publication featured three teams:

INPA (Indo-Pacific)
MENA (Middle East and North Africa)
LTAM (Latin America)

This regional focus was selected to address underexplored subjects in mainstream reporting and to explore unique aspects of regional conflicts, thereby engaging academic outreach programs. Focusing on the global south also positions our analysis to respond promptly to major international events in these areas.

The Regional Model

Each team operates independently, sharing resources and conducting internal quality assurance. The products are then submitted to the editorial staff for final QA and inclusion in the publication.



Advantages of the Regional Model:

• **Flexibility:** Students choose their focus within broad regions, easily capturing relevant events each cycle.
• **Collaboration:** Working in region-specific teams allows for shared insights and a comprehensive understanding of transnational issues.
• **Small-Scale Productions:** Often handled by one or two students, these projects facilitate closer collaboration between team lead editors and analysts, streamlining the editorial process at the team level.

Disadvantages of the Regional Model:

• **Focus Challenges:** Diverse regional focuses can complicate coordination and require reshuffling for large-scale projects.
• **Knowledge Sharing Limitations:** Independent operation may limit cross-team sharing of techniques and methods.
• **Scope Limitation:** Exclusively focusing on the global south restricts exploration of issues in other global areas.

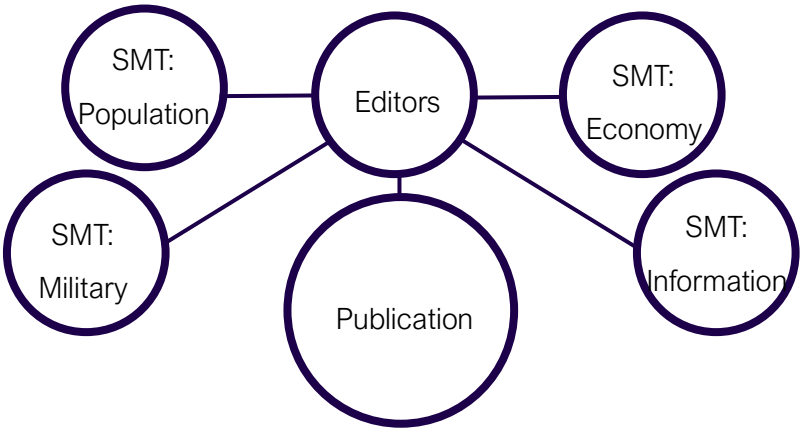
Contingent Models

In our planning meetings, we considered various organizational models. While the regional model was initially chosen, we continue to develop alternative approaches in the background. This strategy aligns with our project's focus on experimental methodologies and prepares us for potential reorganization to accommodate more complex files.

Subject-Matter Model

This model groups student analysts by subject matter to collaboratively work on a single file.

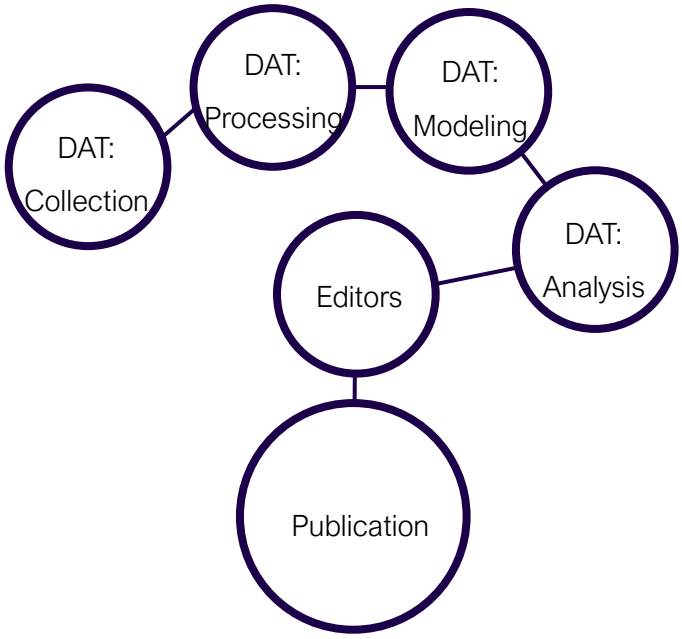
- **Advantages:** Allows in-depth analysis of single issues and collective learning experiences.
- **Disadvantages:** Increases coordination complexity and limits the number of issues per publication.



Stream-Line Model

This model is crafted for complex, high-demand analytical files with a technical focus.

- **Advantages:** Suited for complex, high-demand analytical work, enabling pattern spotting and investigative methods.
- **Disadvantages:** Time-consuming with potential delays in publication due to sequential dependencies and uncertainties.



Outreach

Guest Speaker Workshops

Since the beginning of the process design, we have recognized the indispensable role of open-source subject matter experts from various professional fields. One of our primary strategies is to continuously maintain and expand our outreach network, and inviting guest speakers to our learning workshops is central to this endeavor.

Strategic Timing of Guest Speaker Sessions

The timing of hosting a guest speaker is critical and is strategically chosen based on the goals of the current unit or project. Each phase - beginning, middle, or end - offers unique benefits. Typically, we host guest speakers at the start of each production cycle or immediately following a publication. This timing ensures that our student analysts receive timely and relevant insights that enhance their learning and practical application in the forthcoming projects.

Curating Guest Speaker Topics

The selection of topics for guest speakers is a meticulous process. In the early planning stages, we drafted a rough outline of the workshop topics, ensuring each one builds logically and smoothly from the previous. This progression allows students to gradually enhance their skills and knowledge. These topics include:

Workshop Title	Guest Speaker(s)	Organization
Journalism Writing Techniques		
OSINT Methodologies		
Open-Source Collection		
Security Considerations		
Cultural Perspectives		

Note: Topics and schedules are subject to change, depending on the availability of guest speakers.

Refining Event Organization

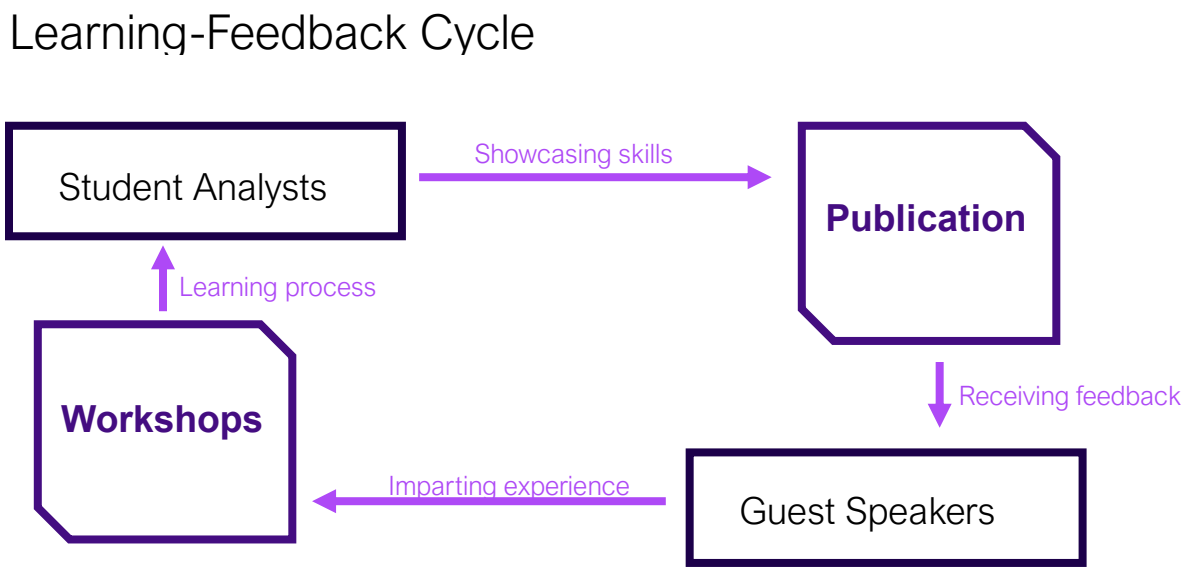
We continually assess and refine the organization of these events to maximize efficiency and enhance the learning experience of our students. Feedback from both participants and speakers plays a crucial role in this process.

Acknowledging and Appreciating Guest Speakers

Recognizing the value brought by our guest speakers, we extend formal letters of appreciation to acknowledge their significant contributions. This gesture not only shows our gratitude but also fosters a sense of community and respect.

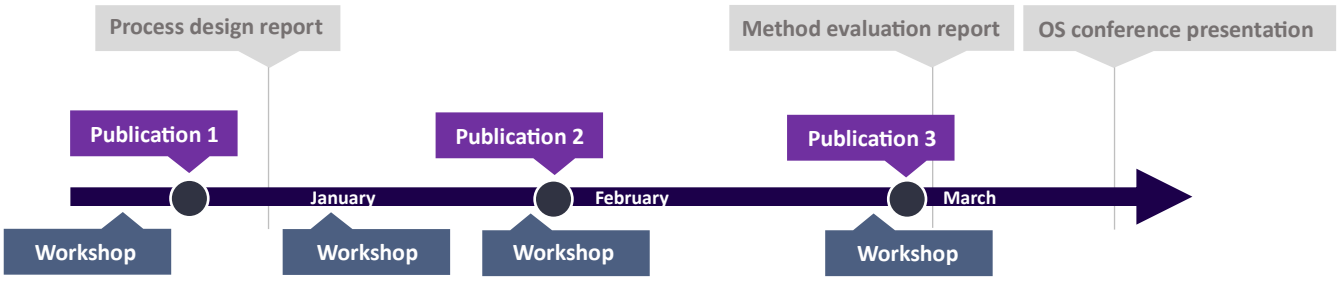
Maintaining Networks and Sharing Success

Staying connected with guest speakers is a priority. We keep them updated on project progress and the impact of their workshops by sharing our publications with them. These publications not only keep them informed but also serve as a tool for expanding our outreach and attracting further attention to GAIA. Additionally, they provide our guest speakers with insights into the academic rigor and development level of the next generation of analysts.



Production

Schedules and Timeline



The current iteration of Project GAIA has been structured with a specific timeline in mind, extending until March 2024. This end date aligns with the academic calendar and is purposefully set to coincide with the OS conference. The decision to frame the project within this period is a calculated adaptation to ensure that our student analysts can make substantial contributions despite the rigorous demands of their academic schedules.

The Rationale for a Short-Term Project

Understanding the unpredictable nature of resource and time constraints in an academic setting, GAIA was conceptualized as a short-term endeavor, roughly spanning a single school year. This duration was selected to provide a manageable and focused framework for the students, enabling them to delve deeply into the project without overextending themselves. Importantly, the designation of GAIA as a short-term project does not imply a limitation on its potential. Instead, it opens the possibility for future iterations and expansions based on the insights and outcomes derived from this initial phase.

Documentation and Legacy

A crucial aspect of GAIA's timeline is the comprehensive documentation of our methodologies and process designs. The objectives of this documentation are twofold:

Establishing a Replicable Framework:

The detailed records of our processes are intended to serve as a blueprint for future initiatives in the realm of student-led open-source analysis. By capturing the nuances of our approach, we aim to provide a structured and tested model that can be adapted and implemented in similar contexts.

Providing Industry Insights:

The documentation is also envisioned to be a valuable resource for project managers and practitioners in the open-source field. It offers a behind-the-scenes look at the organization and management of a student-led analytical project, presenting practical strategies and lessons learned that can inform future projects in this dynamic field.

Part 3

Method Design

This chapter provides a preliminary overview of the methodology employed in Project GAIA, ahead of a more detailed exposition and evaluation set to be published in March. It is essential to outline the key objectives of our methodological approach, which have been iteratively refined throughout the project's lifespan to ensure adaptability and relevance.

Building Experimental Learning

The cornerstone of GAIA's method design revolves around cultivating an environment of experimental learning. This is achieved through:

Diverse Workshops:

We host a range of workshops covering various aspects of open-source reporting, thereby exposing our student analysts to a broad spectrum of knowledge and skills.

Hands-On Writing Practices:

Practical writing exercises are a fundamental part of our methodology, offering students the opportunity to apply their learning in real-world contexts.

Open-Source Collection Experience:

Students engage in actual open-source data collection, gaining firsthand experience in this critical aspect of open-source analysis.

Continuous Writing Feedback and Improvement:

An ongoing feedback loop ensures that student analysts continuously refine their writing and analysis skills, enhancing the overall quality of their work.

Enhancement Through Artificial Intelligence

A significant aspect of our methodology is the integration of artificial intelligence in various stages of the project:

AI-Tools Repository and Management:

We aim to establish a repository of AI tools and resources. This repository acts as a centralized platform where student analysts can access the latest AI software and tools, which are essential in conducting sophisticated analysis. We ensure that these tools are not only cutting-edge but also user-friendly, catering to the varying levels of technical expertise among our students. Regular updates and training sessions are conducted to keep the students abreast of new developments and functionalities in AI tools.

AI-Assisted Research and Scope Setting:

AI tools assist in scanning vast arrays of data and information, thereby significantly reducing the time and effort required for manual data collection. AI algorithms are employed to identify patterns, trends, and relevant data points that might otherwise be overlooked. This not only helps in precisely defining the scope of our analysis but also ensures a comprehensive and data-driven approach to our research. The ability of AI to process and analyze large datasets enables our student analysts to focus on specific areas of interest, ensuring a more targeted and effective analysis.

Expedited Writing Process:

AI applications are leveraged to streamline the synthesis of information, facilitating a more efficient writing process. These applications assist in organizing data, generating insights, and even suggesting narrative structures, thereby enabling our analysts to focus on crafting well-articulated, coherent, and insightful reports. The AI-driven writing aids are designed to enhance the analytical prowess of our students, allowing them to produce high-quality content in shorter timeframes.

Production with a Smaller Footprint

In response to the constraints of time and resources, particularly considering our students' busy academic schedules, our methodology emphasizes a "smaller footprint" approach:

Low Personnel Demand:

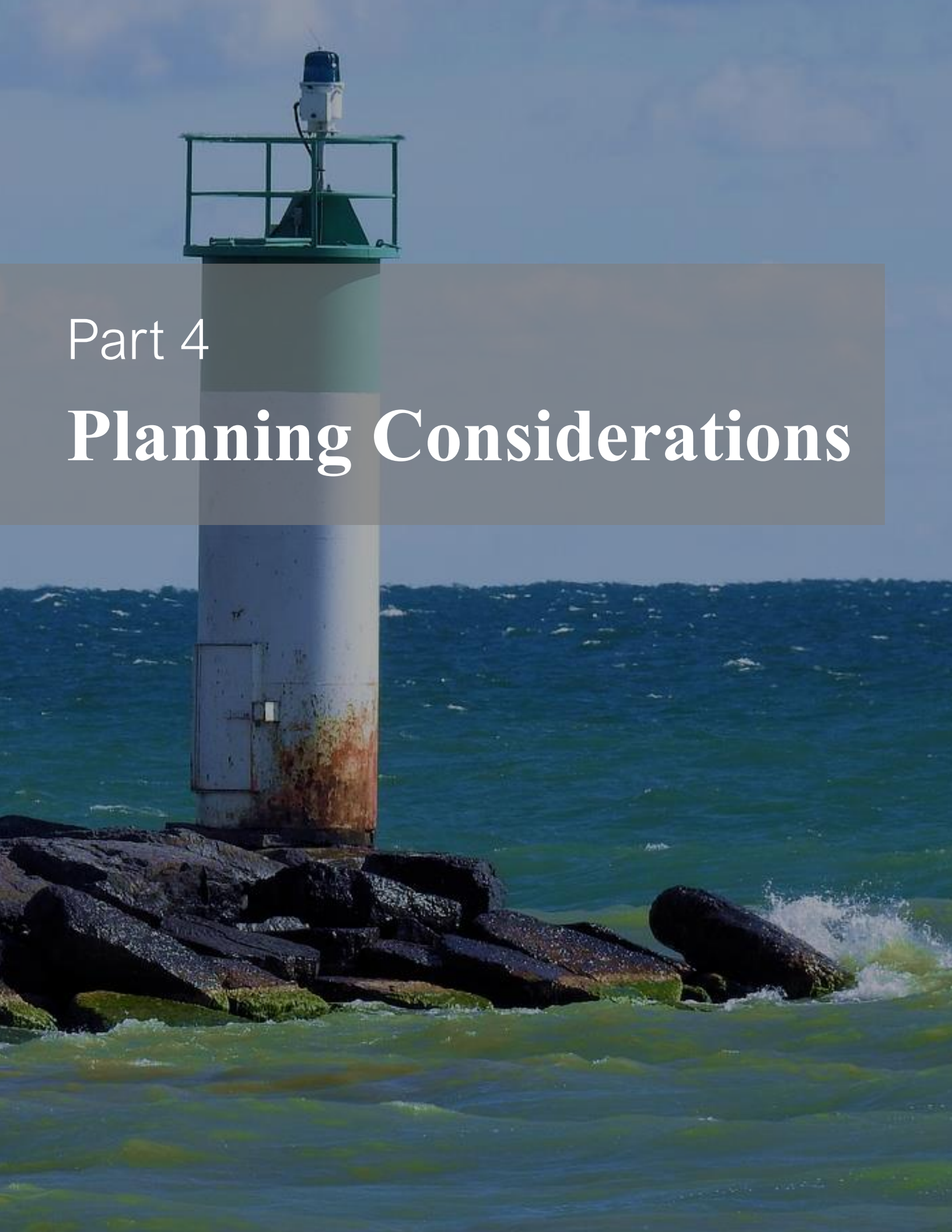
Understanding the constraints typically associated with academic projects, we aim to operate effectively with a limited number of participants. This deliberate design choice ensures that each student analyst can contribute meaningfully without the risk of resource depletion or burnout. It allows for a more focused and engaged team, where each analyst's work is crucial to the project's success. The small team size also fosters a sense of ownership and accountability among the students, leading to higher quality outputs.

Flexibility in Personnel Shuffling:

One of the key features of our project is the adaptability in team composition. We recognize that student availability and interests can vary significantly over time. Our flexible approach enables us to reconfigure teams as needed, accommodating changes in student schedules and shifting interests. This flexibility not only helps in maintaining a steady flow of work but also ensures that students are working on topics that genuinely interest them, thereby enhancing their engagement and the quality of their analysis.

Short and Digestible Reports:

In line with the time constraints faced by our student analysts, GAIA focuses on producing short yet substantial reports. These reports are designed to be digestible, allowing readers to quickly grasp the key findings and insights. For the analysts, this approach translates into a more manageable workload, enabling them to concentrate on producing clear, concise, and impactful content. This publication structure is particularly suited for the fast-paced nature of open-source reports, where timely and succinct information is often more valuable.



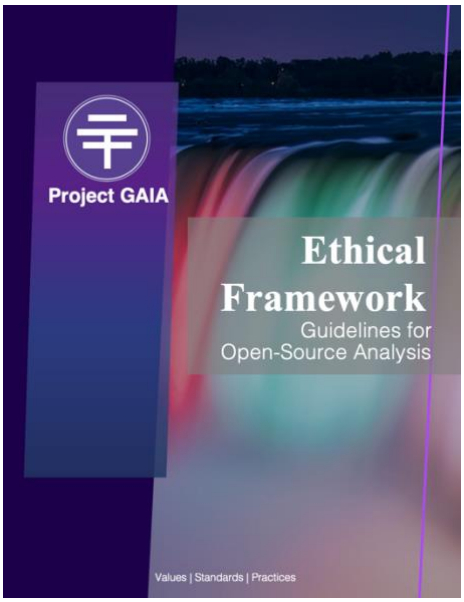
Part 4

Planning Considerations

As we navigate through the multifaceted landscape of open-source research in GAIA, meticulous planning considerations are of paramount importance. This chapter delves into the key aspects of our strategic planning, which ensures the project's integrity, effectiveness, and adaptability.

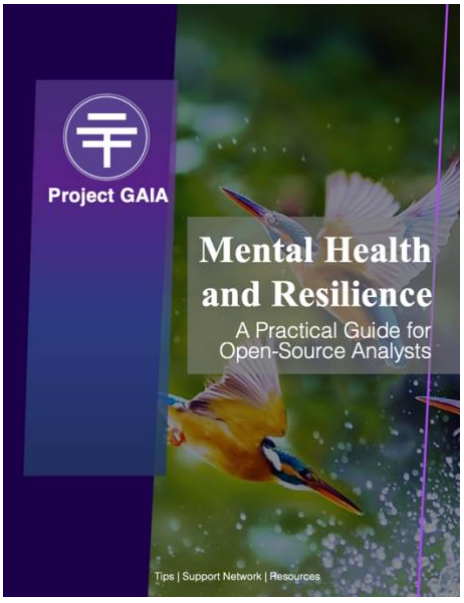
Ethical Considerations

Open-source analysis, by its very nature, presents unique ethical challenges, particularly concerning privacy. The digital age has made personal information increasingly accessible, especially on social media platforms, raising the bar for ethical vigilance. To protect both the subjects of our research and our analysts, we have instituted stringent guidelines to define the limits of data collection and to ensure that our methods are non-invasive. Moreover, we uphold the principles of intellectual property and copyright law with utmost seriousness. The enforcement of these ethical standards is overseen by our dedicated Ethics Officer and is further outlined in our comprehensive ethics document.



Mental Health Considerations

The mental well-being of our student analysts is a concern we address with the utmost care, especially given the potential for vicarious trauma when dealing with sensitive open-source material. We prioritize building mental resilience and a strong support network within our team. Our Ethics Officer operates within this sphere, providing guidance and resources as detailed in our Mental Health Guideline document. These provisions are vital in fostering a safe and supportive research environment.



Time Management

Balancing the depth of analysis with the time constraints inherent in academic settings is a critical aspect of our project planning. Maintaining a consistent publication tempo is essential, as we aim to meet our goal of three publications within our scheduled timeline. Timing considerations also extend to the organization of guest speaker workshops, which are planned to accommodate the speakers' availability and to maximize student participation without overburdening their academic schedules.

Personnel Management

Effective personnel management is key to the richness of the learning experience we offer. By strategically shuffling student analysts among teams, we ensure a diverse range of experiences and learning opportunities. During periods when personnel are limited, we balance team composition to maintain productivity. Recruitment and onboarding are managed at the team level, leveraging the outreach programs of CASR to continually attract new talent. This decentralized approach alleviates the organizational demand on the Project Manager and fosters a distributed, efficient management structure.

Discretion for Guest Speakers

Recognizing the sensitive nature of the work many of our guest speakers are involved in, we exercise discretion, especially in public forums like social media. We abide by the Chatham House Rule, ensuring that discussions during workshops are not attributed directly to our speakers. Any materials shared by our guest speakers are treated as their protected intellectual property and are handled with the confidentiality they require.

Part 5

Road Ahead in 2024

As GAIA strides into 2024, we are poised to take significant steps toward refining the caliber of our work and expanding our influence within the field of open-source analysis. The forthcoming year is set to be a period of strategic development, with a focus on enhancing the quality of our analytical products and fortifying the foundations laid in the previous phases of our journey.

Elevating Product Quality

A key goal for 2024 is the improvement of our analytical outputs. To achieve this, we are committed to establishing more robust feedback mechanisms. Our intent is to construct a network of stakeholders—individuals and institutions with vested interests in the quality of OSINT—who can provide constructive feedback to our analysts. An integral part of this effort will be the development of a system to catalog received critiques, enabling us to act on each piece of feedback thoughtfully and precisely to ensure targeted and effective enhancements.

Innovative Presentation Through Infographics

In the spirit of continuous innovation, we aim to introduce more infographic products into our repertoire. Infographics have the potential to convey complex data and analysis in an accessible and visually engaging manner. However, this ambition comes with the recognition that producing high-quality infographics requires greater technical proficiency and potentially more time investment from our student analysts.

Expanding Data Collection

To deepen our analytical insight, we plan to collect larger datasets to facilitate more sophisticated pattern spotting and trend analysis. This initiative will be carefully balanced with our small footprint strategy, ensuring that we remain within our resource constraints while still striving for analytical depth and breadth.

Experimenting with Format Changes

In 2024, we anticipate experimenting with changes in our report formats, including the subject-matter model and the stream-line model. The documentation of these experiments will be vital for the project's growth and learning. However, we are cognizant of the high administrative and coordination costs that reorganization may incur. A thorough risk-benefit assessment will be conducted in January to inform our approach to the second publication cycle.

Defining Our Audience

A deliberate shift in our strategy for 2024 will be the identification of a specific audience for our analytical products. Our initial approach intentionally avoided defining a precise audience to preserve flexibility; however, moving forward, we recognize the value of targeting our analysis. We aim to establish connections with academic professionals specializing in the regions that our teams are focused on, seeking their mentorship and guidance to refine the regional analysis we produce.

Preparing the Method Evaluation Report

A pivotal task for the upcoming year is the preparation of the method evaluation report, which will encapsulate the cumulative experiences and lessons learned throughout the project. The production of this report will commence immediately and evolve concurrently with our other initiatives. An early draft will be circulated to gather feedback from faculty and other stakeholders, ensuring that we are well-prepared for the OS conference and beyond.

The year 2024 represents a time of growth, reflection, and refinement for GAIA. We remain committed to producing high-quality, impactful open-source analysis while nurturing the development of our student analysts and contributing to the collective knowledge of the field.

Notes

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Cyber Analytics and Security Research (CASR) is a student-led research group based in Ottawa, Canada. We aim to facilitate industry alignment and cross-discipline research projects for the cybersecurity field by developing a cybersecurity-focused student talent pool, building a network with key government/private stakeholders in cybersecurity, and to provide support to student-led research projects.

Project GAIA is one of the student-driven programs facilitated through CASR. The project is designed to offer open-source analysis training to our student analysts. And it focuses on documenting the organizing and methodological process of experimental open-source practices.

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