Agenda

1200  Welcome, Introductions, Agenda Review (co-chairs).
1210  Review discussion and minutes of previous MLAIWG meeting, held 25 April 2017 (All).
1220  Update from sub-working groups regarding the MLAIWG’s four work plan topics. (Sub-WG Co-leads).
       • Participation, scope, deliverables, milestones, help needed.
1320  MLAIWG panel at GEOINT 2017 (co-chairs).
1345  Review next steps and wrap-up (co-chairs).
1. The meeting convened at noon in USGIF offices in Herndon, VA. (Detailed meeting summary sent to MLAIWG members on 26 April 2017.)

2. We reviewed and finalized the MLAIWG charter now posted on USGIF website.

3. We reviewed the four work plan topics and modified/clarified them (see next slide).

4. Work Plan Way Ahead. Our approach to addressing the four work plan topics will be to form sub-WGs which will each have two or three co-leads. The co-leads will organize the work efforts and solicit participants from the broader MLAIWG membership. We identified most co-leads during the meeting with an additional two volunteers stepping up subsequent to the meeting.

5. MLAIWG Panel at GEOINT 2017. The MLAIWG will hold a panel session at GEOINT 2017 on the Tuesday afternoon of the conference at 4 PM. We have a venue that can accommodate up to 250 people. (Subsequent to the meeting, we identified panel participants: NVIDIA, Boeing, DigitalGlobe, and In-Q-Tel. IQT participant now seeking alternate.)
1. Develop and deliver educational informational regarding advanced mathematical techniques and algorithms, elaborating on when and where to best apply each type of algorithm and how to reduce the number of false alerts. *Identifying use case(s) / problem domain(s) will be essential to success in addressing this topic.*

2. Identify creative hardware for processing large amounts of data – can the MLAIWG help suggest how the government can build such an architecture?

3. Identify the implications of ML and AI adoption for future GEOINT professionals education / training (USGIF recommendation to help benefit the community). *Should include addressing “the trust issue.”*

Work Plan Updates

Topic co-leads provide updates regarding:
• Participation, Scope, Deliverables, Milestones, Help needed

Topic #1: Shaun Donaldson, Apogee / Don Natale, PSU

Topic #2: Frank Tanner, Raytheon / Dr. Willie Williams, Government

Topic #3: Doug McGovern, IBM / Scott Jachimski, BAH

Topic #4: Todd Bacastow, DGI / Ian Eishen, USAF / Zslot Kira, GTRI
Topic 2 Update

The root question for the MLAIWG here is how do we enhance the performance of ML algorithms? We will specifically focus on hardware and architectures for processing large amounts of data. This may include FPGAs, GPUs, CPUs, cloud architectures, etc. For example, if you wanted to process the SpaceNet data set, what would you do?

1. Start with a survey for the MLAIWG members. Topics will include architectures (hardware, software, hybrid) that the representatives of the MLAIWG are using for processing their big data sources. TA2 co-chairs will distribute draft survey questions to larger MLAIWG members by 16-June so members can come prepared to discuss at the 27-June meeting. Note, there is an implicit assumption that we are GEOINT focused here (i.e. pixels).

2. After June meeting and discussion, TA2 co-chairs will send survey RFI to MLAIWG members by 07-July. TA2 co-chairs will request responses by 14-July. TA2 co-chairs will consolidate responses for presentation at 25-July MLAIWG meeting.

3. 25-July MLAIWG meeting will discuss survey findings. Topics will include results along with information relevant to government customer. For example, TA2 co-chairs will discuss how architectures may fit into both "as-is" and "to-be" Government ML vision. This meeting will shape next steps for TA2. Should we do a deep dive on candidate architectures? Should we do MLAIWG member briefings on their suggested architectures?

USGIF MLAIWG

Topic #4: State of ML and AI in GEOINT
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- **What members have been participating/supporting your topic?**
  - Todd Bacastow, Todd.Bacastow@digitalglobe.com (co-chair)
  - Ian Eishen, ian.eishen@us.af.mil (co-chair)
  - Zsolt Kira, Zsolt.Kira@gtri.gatech.edu (co-chair)

- **How you have scoped the topic?**
  - Focusing on open source data and software projects

- **What deliverables you envision?**
  - List of open source datasets suitable for ML by modality/phenomenology
  - List of general ML classification libraries
  - List of open source software projects by application area
  - Summary outputs – USGIF website page, blog post, Trajectory article. Identify needs/opportunities for the community.

- **Milestones you've identified?**
  - April 2017: Committee formed
  - May 2017: Established focus areas and initial plan
  - June-July 2017: Develop lists, organize, and start to summarize findings
  - August 2017: Explore opportunities to publish findings
  - September-October 2017: Publish findings with USGIF

- **Help you might need?**
  - Recruit members to participate
  - Identify opportunities to publish the work with the USGIF and others
MLAIWG at GEOINT 2017

MLAIWG GEOINT 2017 Panel

Title: The State of Machine Learning & Artificial Intelligence in GEOINT

Focus: Panel of practitioners share insights and lessons from applications of ML & AI in the field of GEOINT.

Panel Members:
- Tom Reed, NVIDIA (facilitator)
- Brian No, Boeing
- Todd Bacastow, DigitalGlobe
- Adam Van Etten, In-Q-Tel (*seeking alternate*)
Next Steps and Wrap-up

• Review action items from this meeting.

• Around the room / phone for final comments.

• Upcoming MLAIWG events:
  • MLAIWG GEOINT 2017 Panel (Tues, 4 PM).
  • 27 June 2017: MLAIWG monthly meeting (noon – 2 PM at USGIF).