Welcome!

We will get started at the top of the hour!

>>Please activate the Zoom Chat window for panelist and attendee interactions<<

YOU WILL EXPERIENCE SILENCE UNTIL WE START
WELCOME!
NetHope Solutions Center

Webinar:
How to get started with AI:
Learn from current practical implementations in the nonprofit sector

November 19, 2019
Housekeeping

• Let’s keep this interactive: Post questions in Zoom Chat window for the Q&A and discussion session

• Look for a follow-up email with link to recording and collateral on NetHope Solutions Center

• Please respond to webinar satisfaction poll presented after the webinar
Host:

Leila Toplic, Lead for Emerging Technologies, NetHope

Speakers:

Michael Scholtens, Program Associate, The Carter Center

Bo Percival, Innovation Lead for Skills and Opportunities for Youth Employment and Entrepreneurship, Plan International
How To Get Started With AI

**Host:** Leila Toplic, Lead for Emerging Technologies, NetHope

**Presenters:**
Bo Percival, Innovation Lead for Skills and Opportunities for Youth Employment and Entrepreneurship, Plan International
Michael Scholtens, Program Associate, The Carter Center
Welcome to the Emerging Technologies webinar series!

NetHope's Emerging Technology Initiative is focused on growing NGO’s internal expertise and capacity to evaluate, develop, procure, and use emerging technologies like AI and blockchain in their work.
AI at 2019 Summit

4 focus areas based on NetHope member (global NGO) needs:
1. Ethical, responsible development and use of AI
2. Lessons learned from practical implementations (today)
3. AI/ML tools and services (Dec 3 webinar)
4. Evaluating AI for field programs and internal operations
Where do we see the potential of AI to deliver value?

- All 17 SDGs
- Field Programs and Internal Operations
- Incremental improvements to existing processes /programs and new programs/products
Example use cases / practical implementations from our sector

- Predicting food insecurity in Malawi.
- Detecting online hate-speech content for removal.
- Early warning systems for earthquakes in Mexico.
- Identifying Zika virus reservoirs in the Americas.
- Preventing poaching of wildlife with better park ranger routes.
- Detecting malaria.
- Detecting plant diseases.
Today: Lessons learned from 2 practical implementations

<table>
<thead>
<tr>
<th>Field Programs</th>
<th>Internal Operations</th>
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<td>Plan International’s Training and Employment Support Services Assistant (TESSA) is a chatbot that helps marginalized youth in the Philippines articulate their skills, create a full competency profile, and find work and training opportunities where they live.</td>
<td>The Carter Center’s Syria Conflict Mapping team is using AI to classify data and get more accurate and timely analysis on the Syrian conflict.</td>
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For additional examples of practical implementations of AI in our sector, review this webinar: http://bit.ly/AI_Conservation
As you begin evaluating AI for your work, consider using questions from ‘AI for Good’ Framework to guide the process.

AI for Good’ Framework is a set of 32 questions designed to guide nonprofits and partners through the evaluation process to determine suitability of AI for international development and to plan for sustainability.

**SAMPLE QUESTIONS.**

1-What problem are you trying to solve?
2-How is the problem being addressed today?
3-Why is AI better than the current solution?
4-What is the solution?
5-What kinds of data does your solution need?
6-What resources do you need to support the development, implementation, and maintenance of the solution?
7-What are the potential biases that AI may introduce or amplify in your context?
8-What is your approach to maintaining the solution?

TESSA

Plan International’s Training, Employment and Support Services Assistant
What problem are you trying to solve?

Marginalized youth in Asia, particularly young women, are unable to effectively express and communicate their skills and link to suitable economic opportunities.
How is the problem being addressed today?

QUALITY WITHOUT QUANTITY
Community Development Facilitators work across private sector and value chain partners and support youth to understand and ‘formalize’ their skills then link them to opportunities.

LIMITATIONS
The CDF approach requires significant human and financial resource and often experiences and demand for support cannot be met.
Why is AI better than the current solution?

APPROACHABLE & ACCESSIBLE
• Anywhere, anytime
• Extends reach and capacity
• Access to geographically marginalized youth
• Provides an alternative interface for diverse youth

CONSISTENT QUALITY
• Compliments the current approach
• Takes quality inputs to scale
• Provides an equal intervention to all youth
What is the solution?

TESSA translates informal skills and interests into formal employability skills and links youth to potential aligned economic opportunities.
What kinds of data does your solution need?

USER & LABOUR MARKET DATA

- Age
- Location
- Employment history
- Personal interests
- Work experience
- Job profiles
- Job skills

Where and how are you getting these data?

- User data is collected through NLO conversations with TESSA..
- Labor market data is collected through a Plan International customized portal.
- Jobs and skills data will be automated in near future
- Partnerships being formed with government and local hiring sites
What resources do you need to support the development, implementation, and maintenance of the solution?

**Technical**
- Product Owner
- Designer
- Developer
- Gender Experts
- Subject Matter Experts
- Initial Dev Team (Accenture)
- Solution Architects
- Environment

**Non-technical**
- Project Oversight
- Administration
- Community Development
- Facilitators
- MarComms
- Influencing
- Community Support Workers
What are the potential biases that AI may introduce or amplify in your context?

GENDER TRANSFORMATIVE TECH
• Extensive bias exists in preexisting AI tools developed by predominately male tech teams
• Recommendation AI often reinforces preexisting stereotypes. For example women are often recommended to stereotypically ‘female’ roles (hairdressing, beauty etc.)
• Language in conversations needs to be gender transformative

IN DESIGN
• Subtle bias such as external influences crept into the design of the solution.
• Implicit bias exists in the ‘Human’ part of the Human Centered Design Process with.
• We restructured our design teas to ensure gender balance (equal or majority women).
• New features will identify bias in the third party technologies (such as job matching)
What are the potential biases that AI may introduce or amplify in your context?
What is your approach to maintaining the solution?

**INTERNAL SUPPORT**
- Initial development done in collaboration with Accenture Liquid Studios PHL team.
- Initial development done with 2 week sprints over 6 months
- Plan International then took over operational, administrative and support functions
- Internally supported by Plan International’s Innovations Hub for the next 18 months

**SUPPORTING PARTNERS**
+ Accenture Corporate Citizenship – Initial development
+ Microsoft Azure Sponsorship – Architecture
+ Microsoft Employee Engagement – Engineers & Architects
+ Microsoft Giving Program – Ongoing financial donations.
Call to action

Opportunities to Partner
• Architecture strengthening
• Feature expansion
• Context expansion

How you can contribute
• Technical expertise
• Staff augmentation
• Mentorship
Data Management and Internal Capacity Building with Simple AI

Michael Scholtens
Program Associate, Syria Conflict Mapping
The Carter Center
Approaches to AI Integration

AI as Programming
• The most visible approach to AI integration in NGOs and humanitarian organizations.
• Often advanced and requires partnerships and special expertise to develop and maintain.

AI for Data Management
• Solutions for managing and classifying data that supports programming.
• Helps solve discrete, time consuming tasks that drain capacity from teams.
What problem are you trying to solve?

Reduce Staff time spent on Resource Intensive Tasks

- Collection, management, and analysis of conflict data requires extensive staff time, which is often outside of the capacity of project teams at NGOs.
- Exploring and preprocessing conflict data is often 90% of data driven work.
How is the problem being addressed today?

**Manual Entry and Many Hours**

- As many as two members of staff and three interns would take on this task. Using Excel and plotting the points on Google Earth Pro, each value is individually checked and infilled.
- 1909 new locations for 59 reporting periods
- 117,725 values to infill
- If it takes a minute on average to review each value. This represents nearly 2000 hours of work in total.
What is the Solution?

A two-dimensional K-nearest neighbors (Knn) model for updating a “controlled by” attribute for our location point data in Syria.
What is Knn?

• A K-nearest neighbors classification model identifies an assigned number of points that are closest to a given point and determine what classification should be given to that point based on the surrounding values.

• Given the location of Magic World, the three nearest points include two Opposition held locations and one Government held location.
  • Therefore the model assigns a probability of 66% that Magic World is controlled by the Opposition.

• If we increase the number of neighbors to 7, then we see that the prediction has changes.
  • We now have a predicted probability of approximately 57% that Magic World is controlled by the Government.
Why is AI better than the current solution?

Reduction in Effort

• After running the model to infill values, there were 26,589 values remaining to manually infill. That is a 77.5% reduction in effort.
• From nearly 2000 person hours to approximately 440.
• Using 7 neighbors and a threshold of 100% probability to automatically assign values, we had an estimated error rate between 1-2%. Similar to error rates we have experienced using manual entry.
What kinds of data does your solution need?

**Location Data**

The UN identified 7680 official locations used for providing humanitarian assistance. The necessary components of this dataset for our model include:

- Latitude
- Longitude
- Community Name

**“Controlled by” Property**

The military authority in control of the original 5771 UN location for each observation period.
What resources do you need to support the development, implementation, and maintenance of the solution?

**Technical**
- Understanding of simple AI approaches.
  - Knn
  - Regression
  - Support Vector Machines
  - Etc...
- Intermediate R or Python coding skills.
- Data literacy for members of your team and partners.

**Non-technical**
- Team member(s) with desire to learn.
- Institutional support to develop team members’ technical skills.
What are the potential biases that AI may introduce or amplify in your context?

Bias of Open-Source Information

Our project is based on open source data that may have geographic and political biases.

• Geographic Bias
  • In Syria, events that occur in more populated areas are more likely to be reported in online media.

• Political Bias
  • Some sources that report on the conflict have a political bias that may result under or over reporting of specific events.
What is your approach to maintaining the solution?

**Evaluate Data Management Tasks**

- Prior to undertaking a new data management task, we assess the viability of simple AI solutions.
- Continue to invest in the capacity of the team to deploy simple AI solutions.
  - Online learning resources for coding and application of AI.
  - Acceptance on non-linear productivity (i.e. time to preprocess the data for AI methods, prior to progress on data management task.)
Partnerships for Advanced Solutions

Natural Language Processing and Conflict Event Classification

• The Syria Conflict Mapping Team has a partnership with Microsoft to develop a Natural Language Processing (NLP) classification model for conflict events reported by The Armed Conflict Location & Event Data Project (ACLED).
• V1 of this model was limited to a subset of event types, but was capable of accurately suggesting multiple incident types for a single event.
Call to Action

Opportunities to partner
• Discuss your organization’s thoughts on AI integration in your daily management of data.

How you can contribute
• Contribute to a community of NGOs and humanitarian organizations committed to improving the quality of data collection, management, and analysis.
THANK YOU!

If you are a NetHope member and interested in learning more about AI use cases and practical implementation, you are invited to join NetHope AI Working Group:  http://bit.ly/ET_WorkingGroup
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