Global Digital Development Forum

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Global Digital Health Forum

How To Get Started With Artificial Intelligence (AI)
Speakers

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Before we get started

- Please say hello, share your organization, tell us where you’re joining from in the chat box
- Post your questions in the chat box
- Participate in the polls
Poll:
Are you / your organizations using AI in your work?
In this session...

1. Key benefits of and challenges with AI/ML
2. How to evaluate suitability of AI for your programs and organizations
3. Lessons learned from a practical implementation of AI
Terminology

**Artificial Intelligence (AI)** uses computers for automated decision-making that is meant to mimic human-like intelligence. Automated decisions might be **directly implemented** (e.g., in robotics) or **suggested to a human decision-maker** (e.g., product recommendations in online shopping); the most important thing for our purpose is that some decision process is being automated. For shorthand, you can think of AI as “smart automation.”

**Machine Learning (ML)** is a set of methods for getting computers to recognize patterns in data and use these patterns to make future predictions. For shorthand, you could think of ML as “data-driven predictions.”

For additional information about AI capabilities, use cases, practical implementations and lessons learned visit: [https://solutionscenter.nethope.org/et](https://solutionscenter.nethope.org/et)
Why AI? Why now?

- Technology advances are now real due to:
  - Lots of data
  - Greater and cheaper computing power
  - Better algorithms
- There is a whole set of **business** and **societal** problems that AI along with other tools can help us solve.
Why should nonprofits engage with AI?

- Guide the use of AI to solve societal problems
- Provide contextual knowledge about problems an AI solution is meant to address
- Ensure that the needs and perspectives of the local communities are incorporated into AI/ML solutions
- Have a say in responsible, ethical development and use of AI
Where do nonprofits see the potential of AI to deliver value?

- Make decisions and act faster in emergencies
- Reach more people with services and information they need
- Predict problems before they spread and escalate
- Prevent loss of life and resources
Examples of practical implementations in the social impact space

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

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What challenges are nonprofits facing today with AI?

- Technical Expertise
- Resources
- Data
- Sustainability
- Responsible, ethical innovation
AI Suitability Framework: Where Did it Come From?

- Driven by the need of the nonprofit sector for practical tools
- Developed by NetHope AI Working Group in partnership with USAID, MIT, UC Irvine, and many other contributors
- Developed through an iterative and consultative process.
- Designed to be used by different stakeholders: Practitioners, Technologists, Donors
AI Suitability Framework: What is it?

A set of 32 questions, to help you determine suitability of AI for international development programs and to plan for sustainability.

- Define the opportunity
- Evaluate data and bias
- Resource the solution
- Implement the solution
- Maintain and extend the solution
Poll:
What are the main barriers for you / your organizations adopting AI?
Lessons Learned from Practical Implementations

Map With AI
Humanitarian OpenStreetMap Team
Humanitarian actors lack open, easily accessible share-able and update-able map data.

How can we make the vulnerable visible using open and crowd source map data.
How is the problem being addressed today? Are there primary shortcomings or barriers-to-success of this (non-ML/AI) solution/approach?

- Remote mapping using satellite imagery
- Validation of mapped locations
- OSM edits and re-edits
- Imports of problematic data
Is there a potential for AI/ML to address the problem or part of the problem more effectively than the current solution? Why is AI/ML better than the current solution/other approaches?

- Potential opportunities for ‘augmenting and amplifying’ current workflows.
- Not about doing the work, but about increasing the speed and quality of the workflow.
- Looking for supporting human mappers, not substituting for them.
- The obvious solution is not the only solution. This can often be a symptom of looking at AI before the problem.
What is the proposed solution? How does it address shortcomings of existing solutions or approaches?

- AI/ML assisted mapping – to translate AI/ML road and building predictions into (OSM) data.
- Improve scale and quality of data for OSM
- Can increase speed of data input
CONTNUED:
What is the proposed solution? How does it address shortcomings of existing solutions or approaches?

- Using AI/ML to identify the effort and complexity of mapping areas
- Calculates complexity and difficulty of mapping Aras of Interest, beyond what is possible for individuals
What kinds of data will your solution need (e.g., audio, image, video, text)? Where and how will you get these data?

- Satellite imagery
- OpenStreetMap data (various formats)
- Population data
- Risk and resilience data
- Attribute data (ODK, OMK)
How will you measure success?

- **Scale**
  - # of kms of road mapped
  - # of buildings mapped
  - # of people added to the map
  - # of mappers
  - # of mapper edits/changesets

- **Quality**
  - Accuracy of predictions
  - Accuracy of edits
  - Conservation of previous ‘quality’ edits
  - Prioritization of OSM conduct & guidelines
Can the proposed solution be implemented and sustained? What barriers/challenges do you anticipate? How will you address them?

- We have working examples of how it can be implemented
- Can be sustained through open sourcing tools, code and models
- Further research required to validate experiment

Barriers
- Community acceptance
- Maintaining core principles of our community
- Overcoming the hype
- Maintaining inter-dependence
8. What are potential biases that AI may introduce or amplify in your context?

- Could amplify discrimination. Those that are easier to map are more likely to be counted.
- AI is not infallible. May be prioritized over human ‘truth on the ground.’
- The ‘AI for everything’ effect. We want to make sure that it is ‘best fit’ with the most effective application of the techniques and technology
- Success and confirmation bias.
- Non-community motivations and agendas
What resources do you need to support the development, implementation, and maintenance of the solution?

- Community Liaison
- Community members & stakeholders
- User Experience Research/Design
- Engineers
- Development team
- Sandbox for experiment testing
- Sound and high performing architecture
10. What is your approach to maintaining the solution?

- We have already built an API to OpenSource both the data and models
- Working with research partners to validate findings and explore new ideas
- Working with partners, private and open to extend the current work.
- Work with community stakeholders to increase acceptability of current applications
Poll:
Based on what you’ve heard so far, what is your perspective on using AI?
Resources

- **AI Suitability Toolkit for Nonprofits** and blog post
- **NetHope Emerging Technologies** resources
- **AI Primer** webinar
- **Reflecting the Past, Shaping the Future: Making AI Work for International Development** report
Next Steps

1. Continue learning about AI/ML.
2. Learn from other practical implementations in the nonprofit sector. Reuse what works.
3. Explore and experiment with AI/ML capabilities. Try something small first.
4. Get your data in order.
5. Understand ethical, responsible development & use of AI.
6. Partner - for expertise, resources, and a greater impact.
THANK YOU.

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