Roots Africa

Data Dashboard Final Presentation

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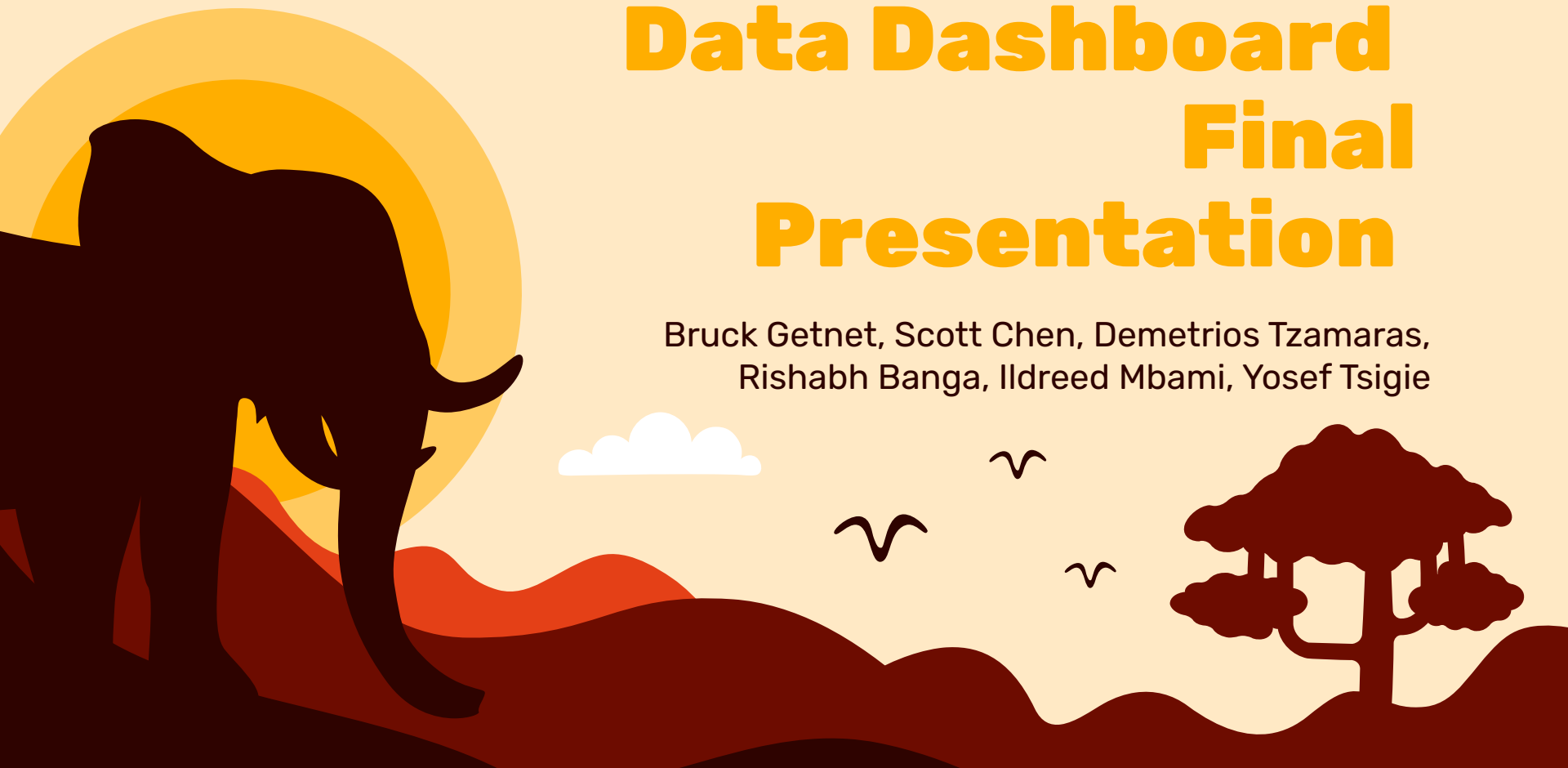

Team Members

Project Manager

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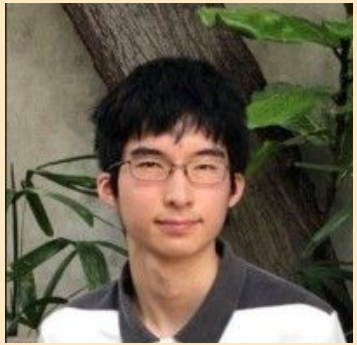

UX Designer

Scott Chen

Technical Lead

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Data Analyst

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Client Lead

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Our Journey

- Who We Are: Information Science students specializing in data visualization and dashboard development

- Client: Roots Africa, an NGO working to end hunger and poverty through agricultural education and entrepreneurship development in Liberia and Uganda

- Mission: Create a comprehensive data monitoring dashboard to help Roots Africa track and showcase their community transformation efforts

- Project Timeline: January - May 2025

Rish

Sowing Seeds of Change

About Roots Africa

- Founded by Cedric Nwafor, who immigrated from Cameroon to the US
- Mission: "Africa doesn't need charity, it needs changemakers"
- Trained 648 changemakers who have trained 11,349 farmers
- 45% of change makers continue training without direct support
- Focus on resilient agriculture and entrepreneurship development

Approach & Impact

- Community-led agricultural initiatives emphasizing resource optimization
- Global mentor connections with 175 instructors worldwide
- 83% of changemakers maintain connections with mentors
- 7 in 10 households increased income after training
- 30 pods have created consulting businesses focused on training other farmers

Bruck

The Problem

Business Challenge

- Despite training over 11,000 farmers across Liberia and Uganda, Roots Africa faces significant challenges in tracking, measuring, and communicating their impact
- No centralized data visualization system for monitoring community transformation
- Difficulty making data-informed decisions about resource allocation

Information Management Issues

- Field data collection challenges in remote areas with limited connectivity
- Need for unique identifiers to track farmers and communities over time
- Lack of standardized metrics for measuring community maturity and readiness
- Limited capacity to analyze collected data and generate actionable insights

The Solution

Proposed Solution

- Comprehensive data dashboard integrating multiple data sources
- Kobo Collect implementation for standardized field data collection
- Interactive dashboard with geospatial visualization capabilities

Data Collection

Kobo Collect Surveys

- **Community Resource Mapping:** Infrastructure, available services, natural resources, financial services
- **Community Readiness Assessment:** Leadership structures, farmer groups, farming practices, market access
- **Community Maturity Assessment:** Community-led initiative history, youth/women involvement, problem-solving approach
- **Individual Household Surveys:** Income sources, farming techniques, food security, training interests

Demetri

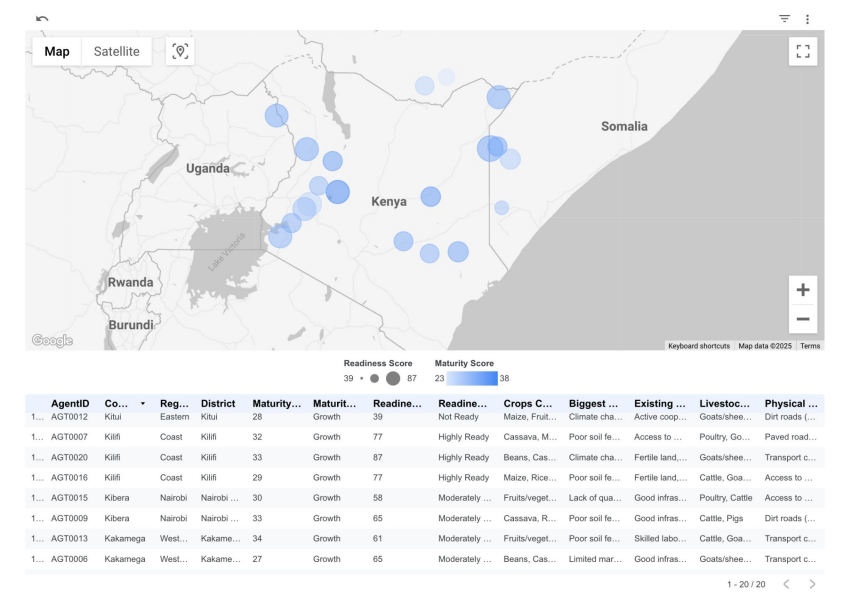
The Dashboard

Demetri

The Dashboard

Key Dashboard Features

- Geospatial mapping of communities
- Community maturity and readiness score visualization
- Resource mapping integration



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1…	AGT0007	Kilifi	Coast	Kilifi	32	Growth	77	Highly Ready	Cassava, M…	Poor soil fe…	Access to …	Poultry, Go…	Paved road…
1…	AGT0020	Kilifi	Coast	Kilifi	33	Growth	87	Highly Ready	Beans, Cas…	Climate cha…	Fertile land,…	Goats/shee…	Transport c…
1…	AGT0016	Kilifi	Coast	Kilifi	29	Growth	77	Highly Ready	Maize, Rice…	Poor soil fe…	Fertile land,…	Cattle, Goa…	Access to …
1…	AGT0015	Kibera	Nairobi	Nairobi …	30	Growth	58	Moderately …	Fruits/veget…	Lack of qua…	Good infras…	Poultry, Cattle	Access to …
1…	AGT0009	Kibera	Nairobi	Nairobi …	33	Growth	65	Moderately …	Cassava, R…	Poor soil fe…	Good infras…	Cattle, Pigs	Dirt roads (…
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1…	AGT0006	Kakamega	West…	Kakame…	27	Growth	65	Moderately …	Beans, Cas…	Limited mar…	Good infras…	Goats/shee…	Transport c…

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Demetri

Decision Making Tools

- Community comparison visualization
- Resource gap identification
- Training impact measurement
- Data export capabilities for reporting
- Filtering by region, maturity stage, and crops

Analyzing the Field

Key Findings from Data

- Communities with stronger leadership structures showed faster progress
- Market access remains a significant barrier in most regions
- Communities with youth involvement showed higher innovation rates
- Common resource gaps: storage facilities, transportation infrastructure
- Most communities fall in Growth (26-35) stage, indicating positive momentum

Rish

Challenges

Project Challenges

- Technical Complexity: Integration between data collection and visualization
- Connectivity Issues: Limited internet in rural areas of Liberia and Uganda
- Data Quality: Ensuring consistent entry across field agents
- Resource Constraints: Client has limited technical staff
- Implementation Timeline: Balancing comprehensive features with project deadline

Scott

How we overcame them?

- Prioritized offline functionality in Kobo Collect
- Created comprehensive user guides with visual tutorials
- Developed data validation procedures to ensure quality
- Simplified dashboard interface for non-technical users
- Phased implementation approach focusing on core requirements first

Results

Delivered Solutions

- Data Collection System: Fully configured Kobo Collect with four survey types (Community Resource Mapping, Community Readiness, Household Surveys, Maturity Assessment)
- Interactive Dashboard: Geospatial visualization showing community locations, maturity scores, readiness levels, and key agricultural data
- User Documentation: Comprehensive guide for maintaining data collection and dashboard systems

Scott

Impacts of Data DB

- Easily identifies communities most ready for RA transformation
- Optimizes resource allocation to meet community needs
- Offers better reporting to donors & stakeholders (Export Feature)
- Ability to track community progress long-term

"This isn't just a technical solution, it's a change in how Roots Africa understands their impact"

Yosef

Next Steps

- Suggest field agents complete data collection for all communities (Dummy data)
- Ensure a proper handoff by developing a training document for future dashboard administrators
- Continue exploring advanced analytical capabilities to discover further success factors

Long-Term Vision

- Advise RA to create a community-facing dashboard for local leaders
- Inform RA to develop a mobile app for increased accessibility

"The long-term vision is for communities themselves to use data to drive their own transformation"

Yosef

Thanks!

Do you have any questions?