

Community on Multimodality: Participatory Action, Service, and Support (COMPASS)

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Vision:

Human services 2.0: enable **discovery** and **delivery** of human services with a click of a button

Community Partners:



Community-identified Problem:

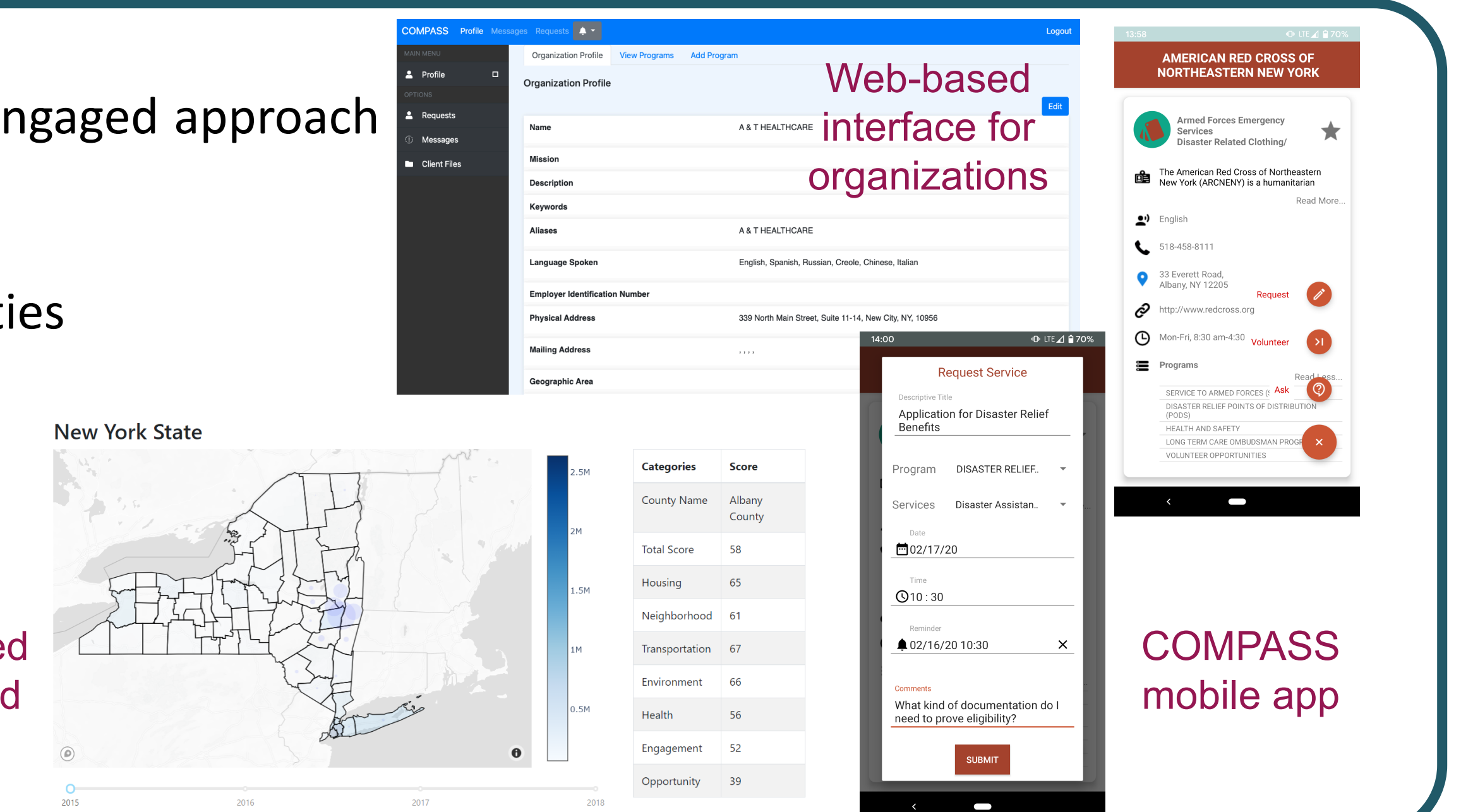
- Simplify** discovery and use of services
- Enable** two-way communication between service seekers and service providers
- Deploy** resources more efficiently

Intellectual Merit:

- Sociotechnical advancements**
 - Uncover** coordination patterns in non-profit organizations
 - Identify** factors that affect service seekers pathways
 - Instance-wise** decision-making in machine learning
 - Online multi-class **hierarchical** classification
 - Network topology inference** based on administrative data
 - Algorithmic decision-making using **untrustworthy training data**
- Impact on application domains**
 - Health & Wellbeing, Community Planning & Design, Financial Stability, *etc*
 - Streamline** access to human and public services
 - Enable **service coordination** and collective problem solving, and enhance **communication** between service providers and service seekers

Project Update:

- Analysis of homelessness pathways**
 - Homelessness service system network topology** inference based on administrative data
 - Computational analysis of **homelessness trajectories** to identify factors that contribute to positive outcomes
 - Concept of stability** upon exiting homelessness service system
 - Domain-specific metrics for **algorithmic homelessness services allocation evaluation**
 - Examined how homeless individuals **navigate through services**
- COMPASS technological solution**
 - Reflected on **process, outcomes, and lessons** of community-engaged approach during project duration
 - Explored possibility of **pilot study** with community partners
 - Reached out to **Findhelp.Org** to discuss collaboration possibilities
- Machine learning research**
 - Instance-wise prediction** using single/multiple feature views
 - Online multi-class **hierarchical** classification
 - Algorithmic classification using **untrustworthy training data**



Broader Impact:

- Societal impact**
 - In alignment with United Nations Sustainable Development Goals 1 (*no poverty*), 2 (*zero hunger*), 3 (*good health and well-being*), 10 (*reducing inequality*), and 11 (*sustainable cities and communities*)
 - Prepare communities to withstand emergencies (e.g., pandemics)
- Who will care/benefit from project outcomes?**
 - Service providers and service seekers
 - Federal/local government(s)

Sustainable Community Impact:

- Technology to streamline discovery and delivery of human services
 - Mobile app for service seekers
 - Web-based interface for organizations
 - Semi-automated Web data acquisition engine
 - Cloud-hosted repository
 - Web-based dashboard
 - Decentralized transactional platform
 - API and documentation
- Insights on service coordination and needs of service seekers

Next Steps:

- Sustainability and Scalability**
 - Identify **industrial partners & communities** interested in pilot and adoption of COMPASS
 - Maintain **project website** beyond award duration
 - Continue updating project materials in **S&CC-VO**
- Machine Learning & Network Science Research**
 - Network topology inference, instance-wise hierarchical prediction using noisy training data, *etc*
- Social Science Research**
 - Understanding community dynamics, technology impact

