

# Gloire Rubambiza, M.S.

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## Education

**Ph.D. in Computer Science.** August 2024 (Expected).  
Cornell University – Ithaca, NY  
*Towards Resilient Rural Networking Infrastructure for Digital Agriculture*  
Advisors: Hakim Weatherspoon, Phoebe Sengers

**M.S. in Computer Science.** May 2022.  
Cornell University – Ithaca, NY

**B.S. in Computer Science;** Minor – Math. April 2018.  
Grand Valley State University – Allendale, MI

## Research Interests

Computer Systems & Networking, Human-Computer Interaction (HCI)

## Publications

### Refereed Conference and Journal Papers

It is standard in computer science papers for lead student authors and advisors to go first and last, respectively

- **Gloire Rubambiza**, Phoebe Sengers, Hakim Weatherspoon, and Jen Liu, “Seam Work and Simulacra of Societal Impact in Networking Research: A Critical Technical Practice Approach”, ACM Conference on Human Factors in Computing Systems (**ACM CHI '24**), 2024
- Shiang-Wan Chin, **Gloire Rubambiza**, Yifan Zhao, Keyvan Malek, and Hakim Weatherspoon, “Realtime Optimization and Management System (ROAM): A Decision Support System for Digital Agriculture Systems”, *Smart Agricultural Technology*, 2024
- **Gloire Rubambiza**, Shiang-Wan Chin, Sachille Atapattu, Mueed Rehman, José F. Martínez, and Hakim Weatherspoon, “Comosum: An Extensible, Reconfigurable, and Fault-Tolerant IoT Platform for Digital Agriculture”, USENIX Annual Technical Conference (**USENIX ATC '23**), 2023
- **Gloire Rubambiza**, Braulio Dumba, Andrew Anderson, and Hakim Weatherspoon, “EdgeRDV: A Framework for Edge Workload Management at Scale”, IEEE International Conference on Edge Computing and Communications (**IEEE Edge '23**), 2023
- **Gloire Rubambiza\***, Fernando Romero Galvan\*, Ryan Pavlick, Hakim Weatherspoon, and Kaitlin M. Gold, “Towards Cloud-Native, Machine Learning Based Detection of Crop Disease with Imaging Spectroscopy”, *Journal of Geophysical Research, Biogeosciences*, 2023
- **Gloire Rubambiza**, Phoebe Sengers, and Hakim Weatherspoon, “Seamless Visions, Seamful Realities: Anticipating Rural Infrastructural Fragility in Early Design of Digital Agriculture”, ACM Conference on Human Factors in Computing Systems (**ACM CHI '22**), 2022

## In Preparation/Review

- **Gloire Rubambiza**, Fernando Romero Galvan, Braulio Dumba, Andrew J. Anderson, Martin M. Perez, Julio O. Giordano, Kaitlin M. Gold, and Hakim Weatherspoon, “Towards A Cloud-Native, Scalable, and Fault-Tolerant Platform for Digital Agriculture”, **USENIX NSDI**, 2025
- Jen Liu, Phoebe Sengers, Lara Roeven, **Gloire Rubambiza**, Donny Persaud, Hakim Weatherspoon, and Steven Wolf, “Material Anticipation: How Realities Are Imagined and Produced in Networking Infrastructure Development for Digital Agriculture”, **ACM CSCW**, 2024
- Lara Roeven, Steven Wolf, Phoebe Sengers, Jen Liu, **Gloire Rubambiza**, Donny Persaud, Hakim Weatherspoon, “Analyzing abstraction in critical agri-food studies and computer science: Toward interdisciplinary analysis of digital agriculture innovation”. *Agriculture and Human Values*, 2024

## Workshop Papers

- **Gloire Rubambiza**, Phoebe Sengers, and Hakim Weatherspoon, “Paradoxes in Producing the Future of Farm Work: Anticipating Social Impact through the Lens of Early Adopters”, *Automation Experience at the Workplace* Workshop at **ACM CHI '21**, 2021

## Technical Reports

- Danny Adams, **Gloire Rubambiza**, Pablo Fiori, Xinwen Wang, Hakim Weatherspoon and Robbert Van Renesse, “Tamperproof Provenance-Aware Storage for Mobile Ad Hoc Networks”, 2020

## Extended Abstracts

- **Gloire Rubambiza**, Hakim Weatherspoon, José F. Martínez, and Abraham Stroock, “WaterGuard: Toward Cheap Automated Irrigation Systems Powered by the Cloud and TV White Spaces”, CMD-IT/ACM Richard Tapia Celebration of Diversity in Computing Conference (**ACM TAPIA '20**), 2020
- Martin Matias Perez, **Gloire Rubambiza**, Brandon Barker, Hakim Weatherspoon, and Julio O. Giordano, “Automated real-time integration of data from multiple sensors and nonsensor systems for prediction of dairy cow and herd status and performance”, *Journal of Dairy Science*, Vol. 103, Suppl. 1, 2020
- Kolbeinn Karlsson, Danny Adams, **Gloire Rubambiza**, Zangyueyang Xian, Robbert Van Renesse, Hakim Weatherspoon, and Stephen Wicker, “Untethered: Deployable Blockchains for IoT Environments”, In Proceedings of the ACM Symposium on Cloud Computing (**ACM SoCC '18**), 2018

## Presentations

### Conference Talks

- Seam Work and Simulacra of Societal Impact in Networking Research: A Critical Technical Practice Approach. ACM Conference on Human Factors in Computing Systems (ACM CHI). Honolulu, HI, May 2024
- Towards Resilient Rural Networking Infrastructure for Digital Agriculture. Doctoral Consortium at CMD-IT/ACM Richard Tapia Celebration of Diversity in Computing Conference. Dallas, TX, September 2023
- Comosum: An Extensible, Reconfigurable, and Fault-Tolerant IoT Platform for Digital Agriculture. USENIX Annual Technical Conference (USENIX ATC). Boston, MA, July 2023
- EdgeRDV: A Framework for Edge Workload Management at Scale. IEEE International Conference on Edge Computing and Communications (IEEE Edge). Chicago, IL, July 2023

- Seamless Visions, Seamful Realities: Anticipating Rural Infrastructural Fragility in Early Design of Digital Agriculture. ACM Conference on Human Factors in Computing Systems (ACM CHI). New Orleans, LA, May 2022
- Measurement and Statistical Analysis of Submarine Internet Cable Performance. Leadership Alliance National Symposium. Hartford, CT, August 2017
- Improving African Internet Traffic through Maximization of Node Centrality. 22<sup>nd</sup> Annual University at Buffalo McNair Summer Research Conference. Buffalo, NY, July 2016

## Seminar Talks

- Towards Resilient Rural Networking Infrastructure for Digital Agriculture. Princeton University CS HCI Seminar. Princeton, NJ, 2024
- Towards Resilient Rural Networking Infrastructure for Digital Agriculture. UIUC CS Systems Seminar. Urbana-Champaign, IL, 2023
- Towards Resilient Rural Networking Infrastructure for Digital Agriculture. University of Texas at Austin CS Systems Seminar. Austin, TX, 2023
- Towards Resilient Rural Networking Infrastructure for Digital Agriculture. Stanford University HCI Lunch. Stanford, CA, 2023
- Comosum: An Extensible, Reconfigurable, and Fault-Tolerant Platform for Digital Agriculture. Northeastern University pre-OSDI/ATC Workshop. Boston, MA, 2023
- Towards Resilient Rural Networking Infrastructure for Digital Agriculture. University of Washington CSE Systems Seminar. Seattle, WA, 2022
- Seamless Visions, Seamful Realities: Anticipating Rural Infrastructural Fragility in Early Design of Digital Agriculture. University of Washington ICTD Seminar. Seattle, WA, 2022
- Paradoxes in Producing the Future of Farm Work: Anticipating Social Impact through the Lens of Early Adopters. IBM Hybrid Cloud Academic Project Forum (Virtual). 2021
- Paradoxes in Producing the Future of Farm Work: Anticipating Social Impact through the Lens of Early Adopters. FarmBeats User Community Workshop (Virtual). 2021
- Towards a Software-Defined Farm. Cornell Life Sciences Lecture Series. Ithaca, NY, 2019

## Posters

- SDF 2.0: Towards a Cloud-Native, Scalable and Fault-Tolerant Platform for Digital Agriculture. KubeCon/CloudNativeCon Europe. 2024
- Toward Cheap Automated Irrigation Systems Powered by the Cloud and TV White Spaces. CMD-IT/ACM Richard Tapia Celebration of Diversity in Computing Conference. 2020
- An IoT-friendly Blockchain for Coordination and Accountability. The Cornell, Maryland, Max Planck Pre-doctoral Research School. 2019
- An IoT-friendly Blockchain for Coordination and Accountability. Public Safety Broadband Stakeholder Meeting (PSCR). 2019
- Measurement and Statistical Analysis of Submarine Internet Cable Performance. Grand Valley State University Student Scholars Day. 2018
- Measurement and Statistical Analysis of Submarine Internet Cable Performance. Michigan AGEP Alliance Fall Conference. 2017
- Improving African Internet Traffic through Maximization of Node Centrality. Grand Valley State University Student Scholars Day. 2017
- Improving African Internet Traffic through Maximization of Node Centrality. Grand Valley State University Summer Scholar Symposium. 2016



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|---|-----------------------------|-----------------------------|
| <b>Meta (Facebook)</b>  | UX Research Intern          | May 2022 - August 2022      |
| <ul style="list-style-type: none"> <li>• Improved engineering experience with code deletion projects using internal tools</li> <li>• Executed new research on engineering pain points at the intersection of code and data deletion</li> </ul>  |                             |                             |
| <b>IBM Research</b>   | Research Intern             | May 2021 - August 2021      |
| <ul style="list-style-type: none"> <li>• Implemented a Kubernetes-native data mining platform for dozens of AI hardware engineers</li> <li>• Research results uncovered \$11,000 in potential AWS cloud consumption savings per week</li> </ul> |                             |                             |
| <b>Collective Idea</b>  | Software Development Intern | August 2016 - December 2016 |
| <ul style="list-style-type: none"> <li>• Developed a predictive cron job failure algorithm for the Dead Man's Snitch application</li> <li>• Pair-programmed with senior developers on in-house projects such as add.a.lingua</li> </ul>         |                             |                             |

## Teaching Experience

<b>Machine Learning Application to Plant Science (PLSCI 7202)</b>	Fall 2021
<b>Pre-Sophomore Summer Program in Computer Science (CS 3410)</b>	June 2020
<b>Computer System Organization and Programming (CS 3410)</b>	Spring 2020
<b>SoNIC Summer Research Workshop</b>	June 2019

## Media

### 2023

- **Cornell Bowers CIS:** "Rubambiza receives best doctoral presentation at TAPIA conference for digital ag work." November 8, 2023
- **Los Angeles Times:** "NASA technology can spot wine grape disease from the sky. The world's food supply could benefit." September 5, 2023
- **NASA Earth Press Release:** "NASA helps spot wine grape disease from skies above California." August 4, 2023
- **NASA JPL Media Office:** "NASA Helps Spot Wine Grape Disease From Skies Above California" August 4, 2023 - Picked up by Wine Business, SlashGear, The Sacramento Bee, Hot Hardware, KTLA, Hacker News
- **Cornell Bowers CIS,** "Cornell Bowers CIS celebrates second annual DEIB Awards", May 4, 2023

### 2022

- **Cornell Chronicle:** "Researchers consider invisible hurdles in digital ag design." June 22, 2022
- **Cornell Bowers CIS:** "Digital Ag Systems Won't Be Plug-and-Play - And That's Okay" June 21, 2022

### 2021

- **School News Network:** "I'm hoping the world will be my oyster" April 23, 2021

### 2019

- **Cornell Bowers CIS:** "Inspire - Innovate - Impact: CIS@20 Celebratory Video" October 2019

## Undergraduate Research Experience

<b>University of Colorado Boulder SMART Program</b>	June 2017 - August 2017
<b>Ronald E. McNair Scholars Summer Research Program</b>	May 2016 - August 2016

## Masters Students Advised

Kevin Huang (CS), Yifan Zhao (CS)

## Undergraduate Student Independent Project Advisee

Annie Kimmel (ECE), Mueed Ur Rehman (ECE), Steven Long (CS)  
Raheel Yanful (CS), Steven Owusu (CS)  
Ysabel Tan (ECE), Christine Ahn (ECE)  
Pablo Fiori (CS)

## Mentoring and Service

<b>Cornell CIS Diversity Council</b>	Graduate Representative	2019 - 2021
<b>GSGIC/WICC/GradSWE Graduate School Panel</b>	Panelist	April 2021
<b>Cornell CS PhD Mentoring Program</b>	Mentor	2019 - 2020
<b>Cornell URMC Career Fair Prep</b>	Graduate Reviewer	September 2019
<b>Cornell, Maryland, Max Planck Summer School</b>	Cornell Representative	August 2019
<b>SoNIC Summer Research Workshop</b>	Graduate Panelist	June 2019
<b>Cornell McNair Scholars Graduate Application Panel</b>	Graduate Panelist	October 2018

## Volunteering and Leadership Experience

<b>IBM P-TECH Program</b>	Presenter	July 2021
<b>The Village at Ithaca</b>	Student Achievement Coach	2019
<b>The Immigrant Connection</b>	Citizenship Class Tutor	2017
<b>Samaritas</b>	Cultural Mentor/ESL Tutor	2016
<b>GVSU Office of Undergraduate Research &amp; Scholarship</b>	Session Host	April 2016