

Yaw Anokwa

Contact

Computer Science and Engineering
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Interests

In places where there is no clean water or reliable power, one will often find mobile phones and Internet access. My Ph.D. work explores how to use the availability of that technology to improve the lives of the underserved.

Projects

Open Data Kit

A free and open-source set of phone and cloud-based tools I co-created. [Open Data Kit](#) (ODK) has been used to create survey applications that embed images and location with survey data, clinical applications that provide video-enabled decision support for healthcare workers, and educational applications that assess student literacy. ODK has tens of thousands of users and the project has received a [Google Focused Research Grant](#), the [Pizzigati Prize for Software in the Public Interest](#), and a [WTIA Industry Achievement Award](#).

Change

A research group I co-founded at University of Washington. [Change](#) connects disparate global development activities around campus and facilitates deeper multi-disciplinary collaborations. Change members have launched successful projects, made academic contributions, and won millions of dollars in funding.

OpenMRS

An open-source, enterprise electronic medical record system used in over fifty countries. [OpenMRS](#) is robust enough for a nationwide healthcare system, nimble enough for a field-based clinic, and was designed for users in the developing world. I created the [OpenMRS Appliance](#), a tool that eliminates the difficulties of installing OpenMRS, and [ODK Clinic](#), an Android application that enables providers to make faster and better decisions about patient care. ODK Clinic and AMPATH were recognized in the mHealth Alliance's [Top 11 in 2011 Innovators Challenge](#).

Honors

Graduate School Medal. University of Washington. 2011.

Yahoo! Key Scientific Challenge Grant. Yahoo. 2010.

Research Grant. Yahoo Labs. 2009.

NSF Graduate Research Fellowship. National Science Foundation. 2006.

Ford Motor Company Fellowship. Ford Motor Company. 2006.

Top One Outstanding Male Student Award. Butler University. 2004.

Top Ten Outstanding Male Students Award. Butler University. 2003 - 2004.

Top Hundred Outstanding Students Award. Butler University. 2002 - 2004.

Outstanding Engineering Student Award. Butler University. 2000 - 2004.

Intern Student of the Year Award. Cooperative Education and Internship Association. 2004.

Outstanding Engineering Dual Degree Program Student Award. Purdue School of Engineering. 2003.

Online Journalist of the Year Award. Butler University. 2001.

Education

University of Washington

Doctor of Philosophy in Computer Science

June 2007 - June 2012

- Designed and evaluated tools used for healthcare in sub-Saharan Africa.
- Advised by Gaetano Borriello and Tapan Parikh.

Master of Science in Computer Science

September 2005 - June 2007

- Explored applications for near field communication (NFC) enabled phones.
- Advised by Gaetano Borriello.

Butler University

Bachelor of Science in Computer Science

August 1999 - May 2004

- Minored in mathematics and business administration.

Indiana University-Purdue University Indianapolis

Bachelor of Science in Electrical Engineering

August 1999 - May 2004

- Simultaneously attended Butler University.

Experience

Nafundi

Founder

October 2011 - Present

- Founded technology consulting company for building data collection systems.
- Create custom solutions from widely-used open source technologies.
- Provide services for academia, industry, non-profits, and governments.

Google

Software Engineering Intern

September 2008 - September 2009

- Designed and implemented Open Data Kit (ODK) tools with Android and App Engine.
- Deployed ODK with large organizations in Uganda (Grameen) and Kenya (AMPATH).
- Created an active developer and user community that independently evolve the tools.

Partners in Health

Rwanda Software Developer

June 2007 - December 2007

- Deployed OpenMRS in Rwinkwavu, a small and rural town in Rwanda.
- Implemented summary and search module to increase clinician use of system.
- Managed data entry team and upgraded site computing infrastructure.

Intel Research

Ubiquity Lab, Research Scientist

June 2006 - September 2006

- Wrote Linux device driver for phones to communicate with custom NFC hardware.
- Designed user interaction model for NFC-enabled applications on mobile devices.
- Implemented Bluetooth-based file sharing application to test interaction model.

Anokwa Consulting

Founder

January 2000 - September 2005

- Founded and managed computer consulting firm for the Macintosh platform.
- Provided repair, web development, forensics, group instruction, networking and media services.
- Supported clients ranging from local musicians to large multi-national corporations.

Raytheon

Multi-Disciplined Engineer 2

June 2004 - October 2004

- Managed project to improve digital magnetic anomaly detection for anti-submarine aircraft.
- Provided engineering analysis and support for avionics in Air Combat Electronics program.

Electrical Engineer 1

May 2003 - August 2003

- Designed, implemented and installed system to increase accuracy of F/A-18 radar test equipment.
- Created handheld barcode scanning system to manage wire data in Air National Guard aircraft.

Software Engineer 1

May 2002 - August 2002

- Created application that increased throughput for site-wide document printing by 700%.
- Discovered method to cut aperture card digitization costs by 73% while increasing print quality.
- Designed and implemented web application to evaluate employee training effectiveness.

Butler University

Dawgnet, Webmaster

July 2000 - May 2004

- Led team of four to design, implement and maintain Dawgnet, an online news website.
- Created campaign that recruited over 25 writers, editors and developers.
- Site was a finalist in National Associated Collegiate Press' Online Pacemaker competition.

Engineering Projects in Community Service, Project Lead

August 2001 - August 2002

- Led first EPICS team at Butler in design and implementation of online game for local school.
- Led team of four in design of web-based conference management system for Butler.

Physics Department, Teaching Assistant

August 2000 - December 2001

- Graded homework and labs in an 'Introduction to Analog Electronics' course.
- Tutored students and graded homework for an 'Introduction to Physics' course.

■ Publications

Journals

Stories from the Field: Reflections on HCI4D Experiences. Yaw Anokwa, Thomas N. Smyth, Divya Ramachandran, Jahanzeb Sherwani, Yael Schwartzman, Rowena Luk, Melissa Ho, Neema Moraveji, Brian DeRenzi. Information Technologies and International Development (ITID). 2009.

Conferences

Design of a Phone-Based Clinical Decision Support System for Resource-Limited Settings (Slides, Video). Yaw Anokwa, Nyoman Ribeka, Tapan Parikh, Gaetano Borriello, Martin C. Were. Information and Communication Technologies and Development (ICTD). 2012.

Evaluation of an Android-based mHealth System for Population Surveillance in Developing Countries. Zeshan A. Rajput, Sam Mbugua, David Amadi, Viola Chepng'eno, Jason J. Saleem, Yaw Anokwa, Carl Hartung, Gaetano Borriello, Burke W. Mamlin, Samson K. Ndege, Martin C. Were. American Medical Informatics Association (AMIA). 2011.

Open Data Kit: Tools to Build Information Services for Developing Regions (Slides, Poster). Carl Hartung, Yaw Anokwa, Waylon Brunette, Adam Lerer, Clint Tseng, Gaetano Borriello. Information and Communication Technologies and Development (ICTD). 2010.

Gesture Connect: Facilitating Tangible Interaction With a Flick Of The Wrist (Slides). Trevor Pering, Yaw Anokwa, Roy Want. Tangible and Embedded Interaction (TEI). 2007.

Theses

Improving Clinical Decision Support In Low-Income Countries (Slides). Yaw Anokwa. Dissertation at University of Washington. 2012.

Delivering Better HIV Care in Sub-Saharan Africa Using Phone-Based Clinical Summaries and Reminders (Slides). Yaw Anokwa. Generals Report at University of Washington. 2010.

Beyond Device Pairing: New Interactions on NFC Enabled Mobile Phones (Slides). Yaw Anokwa. Master's Thesis at University of Washington. 2007.

Magazines

Open Source Data Collection in the Developing World. Yaw Anokwa, Carl Hartung, Waylon Brunette, Adam Lerer, Gaetano Borriello. IEEE Computer. October 2009.

Mobiscopes for Human Spaces. Tarek Abdelzaher, Yaw Anokwa, Peter Boda, Jeff Burke, Deborah Estrin, Leonidas Guibas, Aman Kansal, Sam Madden, Jim Reich. IEEE Pervasive. April 2007.

Workshops

Dynamic Data Collection for Participatory Science in Open Data Kit. Yaw Anokwa, Carl Hartung, Waylon Brunette, Jeff Beorse, Gaetano Borriello. Data Collection by the People for the People at CHI. 2011.

A Young Researcher's Thoughts on ICTD Research. Yaw Anokwa. Young Researcher's Information and Communication Technologies and Development (YRICTD) at ICTD. 2009.

Optimizing High Latency Links in the Developing World (Slides). Yaw Anokwa, Colin Dixon, Gaetano Borriello, Tapan Parikh. Wireless Networks and Systems for Developing Regions (WiNS-DR) at MobiCom. 2008.

Deploying a Medical Record System in Rural Rwanda (Poster). Yaw Anokwa, Christian Allen, Tapan Parikh. HCI for Community and International Development (HCI4CID) at CHI. 2008.

Reliable Data Collection in Highly Disconnected Environments Using Mobile Phones. Brian DeRenzi, Yaw Anokwa, Tapan Parikh, Gaetano Borriello. Networked Systems for Developing Regions (NSDR) at SIGCOMM. 2007.

Context to Make You More Aware. Adrienne Andrew, Yaw Anokwa, Karl Koscher, Jonathan Lester, Gaetano Borriello. Smart Appliances and Wearable Computing (IWSAWC) at ICDCS. 2007.

The PSI Board: Realizing a Phone-Centric Body Sensor Network. Trevor Pering, Pei Zhang, Rohit Chaudhri, Yaw Anokwa, Roy Want. Body Sensor Networks (BSN). 2007.

A User Interaction Model for NFC Enabled Applications (Slides, Poster). Yaw Anokwa, Gaetano Borriello, Trevor Pering, Roy Want. Pervasive RFID/NFC Technology and Applications (PERTEC) at PERCOM. 2007.

Posters

UW Change: Exploring Technology for the Underserved. Yaw Anokwa. University of Washington. 2011.

Use of Open Source Tools to Facilitate Population Surveillance in Western Kenya. Zeshan Rajput, Martin Were, Yaw Anokwa, Sam Mbugua, Burke Mamlin, Paul Biondich, Samson Ndege. icePHI. 2010.

Modular Open-Source Tools for Mobile Data Collection. Gaetano Borriello, Yaw Anokwa, Waylon Brunette, Carl Hartung, Adam Lerer. mHealth Summit. 2009.

Building a Simpler Clinician Experience in OpenMRS. Yaw Anokwa, Christian Allen, Chase Yarbrough, Hamish Fraser. Public Health Informatics (PHI). 2008.

Better Health Care Delivery in East Africa Through Computing. Yaw Anokwa. University of Washington. 2008.

RFID Deployments and RFID Scenarios. Yaw Anokwa, Colin Dixon, Brian Ferris, Travis Kriplean, Evan Welbourne. University of Washington. 2007.

Demos

Open Data Kit. Yaw Anokwa, Waylon Brunette, Carl Hartung, Adam Lerer, Gaetano Borriello. Ubicomp. 2009.

A New Generation of Open Source Data Collection Tools. Yaw Anokwa, Carl Hartung, Adam Lerer, Brian DeRenzi, Gaetano Borriello. Information and Communication Technologies and Development (ICTD). 2009.

Talks

Open Data Kit. Tableau Software. Seattle, United States. May 2012.

ODK Clinic. UW CSE Database Seminar. Seattle, United States. February 2012.

Open Data Kit. University of Rochester. Rochester, United States. December 2011.

ODK Clinic. NIH. Bethesda, United States. November 2011.

ODK Clinic. PATH. Seattle, United States. November 2011.

ODK Clinic. UW CSE Affiliates. Seattle, United States. October 2011.

Open Data Kit. Internews. Ukunda, Kenya. October 2011.

ODK Clinic. UW CSE Affiliates. Seattle, United States. October 2011.

Computing for Development. CS4HS Workshop. Seattle, United States. August 2011.

Open Data Kit. Summer Academy for Advancing Deaf and Hard of Hearing in Computing. Seattle, United States. May 2011.

Open Data Kit. University of California, Los Angeles. Los Angeles, United States. May 2011.

Open Data Kit. CUGOS Spring Fling. Seattle, United States. April 2011.

UW Engineers Making A Difference Video. UW Engineering. Seattle, United States. April 2011.

Open Data Kit. Roosevelt High School. Seattle, United States. April 2011.

Open Data Kit. UW Global Health Informatics Colloquy. Seattle, United States. March 2011.

Open Data Kit. ICTD2010. London, United Kingdom. December 2010.

Building Technology for Low Income Regions. FIG Seminar. Seattle, United States. September 2010.

Open Data Kit. University of Cape Town. Cape Town, South Africa. September 2010.

Open Data Kit. CS4HS Workshop. Seattle, United States. August 2010.

Open Data Kit. Microsoft Research. Bangalore, India. June 2010.

Learning Fearlessness and Optimism. Park Tudor School. Indianapolis, United States. April 2010.

Open Data Kit. Butler University. Indianapolis, United States. April 2010.

Computing for the Bottom Billion. Garfield High School. Seattle, United States. November 2009.

Using ODK for Forest Inventories. Jane Goodall Institute. Kigoma, Tanzania. October 2009.

Open Data Kit (Poster). AfricaGIS. Kampala, Uganda. October 2009.

Using JavaRosa in Open Data Kit. OpenRosa Meeting. Dar es Salaam, Tanzania. July 2009.

The Cell Phone Revolution in the Developing World. World Affairs Council. Seattle, United States. June 2009.

Mobile Data Collection. Emerging Technologies for Emerging Infections. Phnom Penh, Cambodia. June 2009.

Computing and Global Development. CSE 190 at UW. Seattle, United States. May 2009.

Stories from a Computer Scientist. Chief Sealth High School. Seattle, United States. May 2009.

Open Data Kit. Google. London, United Kingdom. April 2009.

URreport - Mobile Data Collection. Google. Mountain View, United States. February 2009.

Hacking Africa (Poster). University of Puget Sound. Tacoma, United States. October 2008.

Computing in the Developing World. CS4HS Workshop. Seattle, United States. July 2008.

Power to Change the World Video. UW Computer Science and Engineering. April 2008.

Computer Science in the Developing World (Video). Change Group at UW. Seattle, United States. March 2008.

Deploying OpenMRS in Rwanda. Nokia. San Francisco, United States. January 2008.

Life in Grad School. Butler University. Indianapolis, United States. 2007.

Others

Bringing Mobile to OpenMRS Using Open Data Kit. Yaw Anokwa. Open Mobile Consortium. April 2010.

ODK and JavaRosa: Collaborating in Code. Yaw Anokwa. Open Mobile Consortium. November 2009.

The ORCA Card: Seattle's Public Transit Pass. Brian Ferris, Yaw Anokwa, Colin Dixon, Travis Kriplean, Karl Koscher, Evan Welbourne. 2007

Teaching

CSE 590C1: Seminar on Technology for Developing Regions. Yaw Anokwa. Autumn 2008 to Spring 2010.

CSE 599Y: Mobile and Cloud Applications for Emerging Regions. Yaw Anokwa, Carl Hartung. Autumn 2009.

CSE 590T: SocTech Seminar on ORCA Card. Travis Kriplean, Evan Welbourne, Yaw Anokwa, Colin Dixon, Karl Koscher, Jim Sfekas. Spring 2007.

CSE 590M: SocTech Seminar on RFID. Travis Kriplean, Yaw Anokwa. Instructor. Autumn 2006.

CSE 142: Computer Programming I. Yaw Anokwa. Autumn 2005.

Advising

Connecting ODK Clinic and ODK Collect. James Hu (RIM). Winter 2010.

ODK Build: A Form Designer for Open Data Kit. Clint Tseng (Socrata). Winter 2010.

Syncing OpenMRS Patients in ODK Clinic (Video). Euzel Villaneuva (Tableau), Owen Kim (Google), Jessica Leung. Autumn 2010.

Completing OpenMRS Forms in ODK Collect (Video). Moon Hwan Oh (EPIC), James Hu (RIM). Autumn 2010.

GATHER, Sahana, OpenXData support for Open Data Kit. Katia Nepom, Jiayun Guo, Alan Chen. Autumn 2010.

Testing framework for Open Data Kit. Nancy Do. Autumn 2010.

Implementation of Change website. Sunil Garg (Georgia Tech), Clint Tseng (Socrata). Winter 2009.

Bluetooth communication on Symbian phones. Kinsley Ogunmola (Amazon). Spring 2007.

Service

Peer Mentor. ICTD Conference. 2011.

Advisory Board. CSSE Department, Butler University. 2008 - 2011.

JavaRosa Project Steering Committee. OpenRosa Consortium. 2009 - 2011.

Paper Reviewer. CHI Conference. 2010.

New Grad Mentoring Coordinator. CSE Department, University of Washington. 2009.

YRICTD Coordinator and Co-Founder. Young Researchers in ICTD Group. 2008 - 2009.

Change Coordinator and Co-Founder. Change Group, University of Washington. 2007 - 2009.

Paper Paper. IEEE Magazine. 2008.

Undergrad Liaison and Outreach Coordinator. CSE Department, University of Washington. 2008.

Faculty Recruiting Liaison. CSE Department, University of Washington. 2008.

Prospective Student Committee. CSE Department, University of Washington. 2006 - 2008.

Society and Technology Seminar Co-Organizer. CSE Department, University of Washington. 2006 - 2007.

Holiday Party Organizer and Holiday Skit Director. CSE Department, University of Washington. 2006.

Student Volunteer. Ubicomp Conference. 2006.

Student Volunteer. UIST Conference. 2006.

Editorial Columnist. The Indianapolis Star Newspaper. 2004.

Press

Data delivery: Researchers tap the potential of mobile technologies to gather and interpret information. Alaska Airlines Magazine. May 2012.

Empowering a clean water project. African Review of Business and Technology. December 2011.

The good, the bad & the stupid of 2011. Seattle Business. December 2011.

Regenstrief Investigator a Winner of Top 11 in 2011 Innovator Challenge. Indiana University School of Medicine News. December 2011.

Das Signal Im Nichts. Yaw Anokwa Und Das Open Data Kit. Innovation Stuntmen. November 2011.

Android phones help poor farmers in Uganda. PC World. July 2011.

Hidden Gems Are Inside UW Computer Science & Engineering. Can They Be Mined?. Xconomy. July 2011.

Fun with the Open Data Kit. Bryan McBride. July 2011.

Graduate School Profile. UW Graduate School. June 2011.

Water Filter Project in Africa Gets Technology Boost. VOA News. June 2011.

Exploring the Ecosystem for Pulse Lab Kampala. UN Global Pulse. May 2011.

CSE's Yaw Anokwa Wins UW Graduate School Medal. UW CSE News. April 2011.

Children Map Their Community Using Innovative Technology In India. UNICEF. April 2011.

Open Data Kit: Mobile Data Collection in Africa. Read Write Web. April 2011.

Geek of the Week: Yaw Anokwa: UW Ph.D. student, Open Data Kit and Change. GeekWire. April 2011.

Google's Got the Geo-Location Goods, Part I: Basics and Brand New Tools. OpenSF Blog. April 2011.

Mobile Technology: Small Wonder. InpaperMagazine. February 2011.

WTIA Announces Winners of the 2011 Industry Achievement Awards at Gala Event. Marketwire. February 2011.

Open Data Kit (ODK): Personalizando los resultados. Smartphones Como ICT4D. January 2011.

Gaining Momentum, WTIA Industry Achievers Are Winners. Seattle 24x7. January 2011.

M4D Tech Trends 2011: What to Expect and Hope For. BuildAfrica.org. January 2011.

How Mobile Phones are Promoting Rural Transformation in Africa. Bizcovering. December 2010.

Androids Come to Ghana. JHU Global Water Program Magazine. August 2010.

Going Google. The Indiana-Kenya Partnership Gazette. Summer 2010.

Making a Difference in the World. Park Tudor Phoenix. Summer 2010.

Phoning It In: Changing the World. UW Columns Magazine. June 2010.

Yaw Anokwa, Yingyi Bu Score in Yahoo! Key Scientific Challenges Program. UW CSE News. April 2010.

Tides Awards 2010 Pizzigati Prize to Yaw Anokwa. Tides Foundation. April 2010.

Enabling Data-Driven Decision with the Open Data Kit (ODK). Mobile Active. February 2010.

Google Gives UW \$1.35 Million Grant for Research on Mobile Devices. Seattle Times. February 2010.

Google Puts New Focus on Outside Research. NY Times. February 2010.

Open Data Kit: Cell Phones Become Handheld Tools for Global Development. Computing Research Association. November 2009.

Android Cellphones Dial Up African Health in University Project. Chronicle of Higher Education. November 2009.

Data Collection Where It's Needed The Most. Frontier Economy. November 2009.

Getting Developing World Data With Android and Open Data Kit. ars technica. November 2009.

Open Data Opens Doors for Citizen Scientists. Real Science. October 2009.

Cell Phones Become Handheld Tools for Global Development. UW News. October 2009.

The Open Data Kit - Another Mobile Data Collection App. Mobile Active. April 2009.

References

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