Doctoral Student in Computer Science Receives AAUW International Fellowship Award

The American Association of University Women has awarded a 2021-22 International Fellowship to Racheal Mukisa, a Ugandan native who is currently pursuing a PhD in computer science at Kent State's College of Arts and Sciences.

With an aim to tackle barriers women face in education, the International Fellowship is for women who are pursuing full-time graduate or postdoctoral study in the United States, but who are not U.S. citizens. For the 2021–22 academic year, the AAUW awarded a total of $5 million through fellowships and grant programs to 260 scholars, as well as to community projects and programs that promote education and equity for women and girls.

"The 21st century brought enormous advancements in computing and technology, yet women are still underrepresented in this field," Mukisa says. "One of the reasons for undertaking an advanced career in computing is to build a sustainable pipeline for empowering more women into technology."

Through this fellowship, Mukisa plans to leverage cutting-edge computational techniques to address prevailing challenges in developing countries. Prior to pursuing a PhD in computer science, she worked for a decade in information technology-related functions, including building spatiotemporal models for biosurveillance (using smartphones) of crop transmittable diseases in Uganda while earning her Master of Science in data communications and software engineering at Makerere University in Kampala, Uganda.

Her current research is geared towards managing cardiovascular diseases by building machine intelligence in echocardiography (ECG), a field where sound waves are used to capture heart images for diagnosing cardiac conditions.

"Recent advancements in ECG have led to the generation of complex multidimensional echo data, which exceeds the capabilities of current statistical tools," Mukisa says. "Applying machine learning is useful to analyze heart ultrasound data using signal processing, and such algorithms provide opportunities for developing automated echo analysis and interpretation systems. The automated approach can significantly assist in decreasing the variability and burden associated with manual image measurements."

"We're proud to support the work of these outstanding scholars," says Gloria Blackwell, executive vice president and chief programs officer at AAUW. "This year's recipients are making valuable contributions in a wide range of fields, but with a common goal of improving life for all of us. We're impressed by what these scholars are doing and excited about the great things they'll accomplish throughout their research and careers."

—By Jim Maxwell, BS '00, MS '11

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