

## PERSONAL INFORMATION

## Audrey Julia Waleghwa Mbogho, PhD



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Nationality: Kenyan citizen

## CURRENT POSITION

## Associate Professor of Computer Science

## WORK EXPERIENCE

January 2015 - Present

## Associate Professor of Computer Science

Pwani University, Kilifi, Kenya, [www.pu.ac.ke](http://www.pu.ac.ke)

- Teaching
- Research
- Administration
- Student supervision (undergraduate and postgraduate)
- Curriculum development
- Participation in various committees
- Proposal writing

Sector: Education

October 2016 - Present

## Chair of Department

Department of Mathematics and Computer Science, Pwani University, Kilifi, Kenya, [www.pu.ac.ke](http://www.pu.ac.ke)

- Oversee day to day running of department
- Guide students
- Guide lecturers in the department
- Initiate and guide staff recruitment exercises
- Provide strategic direction for department
- Guide development of curricula in line with industry needs
- Academic Leader for the BSc in Computer Science programme. Duties involved are (1) to spearhead research in computer science and (2) to offer academic leadership in the department.

Sector: Education

April 2006 – December 2014

## Senior Lecturer in Computer Science

Department of Computer Science, University of Cape Town, [www.uct.ac.za](http://www.uct.ac.za)

- Teaching
- Research
- Administration
- Student supervision (undergraduate and postgraduate)
- Curriculum development
- Course coordinator for various undergraduate courses
- Course coordinator for the MSc in Information Technology course, a web-based distance learning course

Sector: Education

July 1999 – July 2003

### IT Specialist

The Stanton/Heiskell Center for Public Policy in Communication, The City University of New York Graduate Center, [www.gc.cuny.edu](http://www.gc.cuny.edu)

- Participated in the development of an interactive educational web site for use by middle school children as part of Project Stretch
- Analysed the project's software and hardware needs
- Provided IT direction and support for the Project

**Sector:** Education

September 1998 – June 1999

### Software Support Analyst

The Computer Center, City University of New York Graduate Center, [www.gc.cuny.edu](http://www.gc.cuny.edu)

- Analysing software needs of the Graduate Center and making recommendations to management
- Provided IT support to the user community, both students and staff
- Responded to query from walk-in clients, via the phone, via email and through on-site visits
- Prepared user documentation

**Sector:** Education

July 1997 – July 1998

### Unix System Administrator

The PhD Program in Computer Science, The Graduate School and University Center of The City University of New York, [www.gc.cuny.edu](http://www.gc.cuny.edu)

- Administered Unix system for the department
- Account creation and management
- Management of IBM AIX Unix servers and workstations
- Assisted PhD students and academic staff in using the Unix workstations.
- Trouble shooting and providing solutions to system problems

**Sector:** Education

August 1994 – August 1996

### Assistant to Data Communications Manager

The Computer Center, City University of New York Graduate Center, [www.gc.cuny.edu](http://www.gc.cuny.edu)

- Laying network cables
- Connectorizing network cables
- Connecting workstations to LAN
- Testing connectivity
- Installing network interface cards and network software
- Troubleshooting network outages
- Responding to problem reports
- Assisting user population (both staff and students) in use of newly connected workstations

**Sector:** Education

## EDUCATION AND TRAINING

- 2006 **Doctor of Philosophy (PhD)**  
The City University of New York, USA
- Computer Science
- 1995 **Master of Science (MSc)**  
The City College of The City University of New York, USA
- Computer Science
- 1992 **Bachelor of Science (BSc)**  
The City College of The City University of New York, USA
- Computer Science

## PERSONAL SKILLS

Mother tongue Kidawida (Kitaita)

## Other languages

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
Swahili	Proficient	Proficient	Proficient	Proficient	Proficient
English	Proficient	Proficient	Proficient	Proficient	Proficient

## Communication skills

- Good communication skills
- Good speaker
- Good writer
- Patient listener

## Organisational / managerial skills

- Currently managing the Department of Mathematics and Computer Science with 10 staff members under me at Pwani University
- Previously managed courses as course coordinator at both undergraduate and postgraduate levels at the University of Cape Town

## Job-related skills

- Good teacher with effective classroom control abilities developed over more than a decade as a university educator
- Able to simplify complex topics and make them accessible to students
- Fair but firm in student assessment
- Good research skills
- Proficient in use of office productivity software
- Able to work well with colleagues in tasks requiring teamwork
- Proficient in proposal writing
- Advanced computer literacy

- Professional Memberships**
- Current:
- ACM (Association for Computing Machinery)
- Previous:
- The use of computer technology to alleviate failure rates in rural schools
  - Application of e-health in the developing world
  - CSSA (Computer Society South Africa)
  - STTUG (Science Teaching with Technology Users Group, a local interest group at The University of Cape Town)
  - EAI (European Alliance for Innovation)
  - SAICSIT (South African Institute for Computer Scientists and Information Technologists)
  - IEEE Computer Society
- Professional Activities**
- Reviewer for poster submissions for ACM DEV 2014
  - Member of Program Committee for SAICSIT annual conference, 2011 – 2014. Reviewed papers submitted to the annual ACM SAICSIT conference over the four years.
- Research Interests**
- My main interest is in ICT4D. Specific problems I'm keen to tackle include:
- The use of computer technology to alleviate problems in education in the developing world such as low pass rates, classroom apathy among students, poor delivery by teachers
  - Application of e-health in the developing world
  - Application of machine learning to problems in education and health
- Teaching Interests**
- I have taught the following topics over the years:
- Discrete Structures (Year 1)
  - E-Learning Technologies (Year 3)
  - Software Project Management (Year 3)
  - Management Information Systems (Year 3)
  - Component-Based Programming (Year 3)
  - Introduction to Computers (Year 1)
  - Object-Oriented Programming (Year 2)
  - Automata Theory (Year 2)
  - Introduction to Java (Year 1)
  - Data Structures (Year 2)
  - Java for Engineers (Year 1)
  - Python for Engineers (Year 1)
  - Software Engineering and HCI (Year 2)
  - Machine Learning (Year 3)
  - Speech and Language Technologies (Postgraduate)
  - Genetic Algorithms and Neural Networks (Postgraduate)
  - Expert Systems (Postgraduate)
- Postgraduate Supervision**
- I have graduated 12 Master's students from 2007-2015, University of Cape Town
  - I graduated 1 PhD student in December 2016, University of Cape Town; Research Topic: Application of machine learning to discover causes of failure in rural primary schools in Kenya
  - Currently I am supervising one PhD student (writing stage, University of Cape Town), Research Topic: Application of machine learning to diagnosis of depressive disorders in underserved communities of Nigeria; expecting to graduate December 2017
- Thesis Examination**
- I have externally examined 2 PhD theses (University of the Western Cape, South Africa; University of the Northwest, South Africa)
  - I have externally examined 3 Master's theses (University of Zululand, South Africa)
  - I have internally examined a large number of Master's theses (University of Cape Town)

- Seminars**
- PhD Proposal Writing. Seminar given to IT lecturers at the Mombasa Polytechnic University College (2011)
  - Human Computer Interaction. Given at the Mombasa Polytechnic University College (2011)
  - Human Computer Interaction. Given at SUNY Ulster County Community College, New York, USA. (2008)
  - Safe Computing. Given at SUNY Sullivan County Community College, New York, USA (2001)
- Publications**
- Mbogho, A., & Hassanali, J. (2017). Tackling Classroom Apathy among Undergraduate Students in a Developing World Context at Pwani University. *Proceedings of INTED2017*. Valencia, Spain: IATED (to appear).
- Ojeme, B., Mbogho, A., & Meyer, T. (2016). Probabilistic Expert Systems for Reasoning in Clinical Depressive Disorders. *Proceedings of the 15th IEEE International Conference on Machine Learning and Applications (ICMLA'16), Anaheim, CA* (pp. 599-604). New York: IEEE.
- Mgala, M., Suleman, H., & Mbogho, A. (2016). Undereducation: Motivating Intervention in Rural Schools with MAPPS. In K. Awori, & N. J. Bidwell (Ed.), *Proceedings of the First African Conference on Human Computer Interaction (AfriCHI '16), Nairobi, Kenya* (pp. 203-207). New York: ACM.
- Ojeme, B., & Mbogho, A. (2016). Selecting Learning Algorithms for Simultaneous Identification of Depression and Comorbid Disorders. *Procedia Comput. Sci.*, 96 (C), 1294-1303.
- Ojeme, B., & Mbogho, A. (2016). Predictive Strength of Bayesian Networks for Diagnosis of Depressive Disorders. In I. Czarnowski, A. M. Caballero, R. J. Howlett, & L. C. Jain (Eds.), *Intelligent Decision Technologies 2016: Proceedings of the 8th KES International Conference on Intelligent Decision Technologies - Part I* (pp. 373-382). Heidelberg, Germany: Springer International Publishing.
- Mgala, M., & Mbogho, A. (2015). Data-Driven Intervention-Level Prediction Modeling for Academic Performance. *Proceedings of the Seventh International Conference on Information and Communication Technologies and Development (ICTD 2015), Singapore* (pp. 2-8). New York: ACM.
- Mgala, M., & Mbogho, A. (2014). Selecting Relevant Features for Classifier Optimization. In A. E. Hassanien, M. F. Tolba, & A. T. Azar (Eds.), *Advanced Machine Learning Technologies and Applications* (pp. 211-222). Heidelberg, Germany: Springer.
- Mbogho, A., Dave, J., & Makhubele, K. (2014). Diabetes Advisor-- A Medical Expert System for Diabetes Management. In T. F. Bissyandé, & G. van Stam (Eds.), *e-Infrastructure and e-Services for Developing Countries: 5th International Conference (AFRICOMM 2013), Blantyre, Malawi* (pp. 140-144). Heidelberg, Germany: Springer International Publishing.
- Mbogho, A., & Marquard, S. (2013). Improving the Transcription of Academic Lectures for Information Retrieval. *Proceedings of The 12th International Conference on Machine Learning and Applications (ICMLA '13), Miami, Florida, USA* (pp. 560-567). New York: IEEE.
- Kivaisi, A., & Mbogho, A. (2012). Web-based Corpus Acquisition. *Proceedings of the Third International Workshop on Spoken Language Technologies for Under-Resourced Languages (SLTU '12)*. Cape Town.
- Mbogho, A., & Katz, M. (2010). The Impact of Accents on Automatic Recognition of South African English Speech: A Preliminary Investigation. *Proceedings of the 2010 Annual Research Conference of the South African Institute of Computer Scientists and Information Technologists (SAICSIT '10), Bela Bela, South Africa* (pp. 187-192). New York: ACM.
- King, S. O., & Mbogho, A. (2009). Evaluating the Usability and Suitability of Mobile Tagging Media in Educational Settings in a Developing Country. In I. A. Sánchez, & P. Isaias (Ed.), *Proceedings of IADIS International Conference on Mobile Learning*, (pp. 230-234). Barcelona.
- Karodia, R., Lee, S., Mehta, A., & Mbogho, A. (2007). Ciphercode: A Visual Tagging SDK with Encryption and Parameterisation. *Proceedings of the IEEE Workshop on Automatic Identification Advanced Technologies (AutoID 2007), Alghero, Italy* (pp. 186-191). New York: IEEE.
- Mbogho, A., & Scarlatos, L. (2007). Genetic Parameter Tuning for Reliable Segmentation of Colored Visual Tags. *Proceedings of the ACM Genetic and Evolutionary Computing Conference (GECCO '07), London, England*. New York: ACM.
- Mbogho, A. (2006). *Reliability and Testing in Vision-Based Interaction (PhD Dissertation)*. New York: City University of New York.
- Mbogho, A., & Scarlatos, L. (2005). Towards Reliable Computer Vision-Based Tangible User Interfaces. *Proceedings of IASTED-HCI, Phoenix, Arizona*. ACTA Press.
- Scarlatos, L., Mbogho, A., & Jaworska, M. (2004). Teaching with Tangibles: A Tool for Defining Dichotomous Sorting Activities (Poster Presentation). *UIST 2004*. Santa Fe, New Mexico.