

## RESEARCH INTERESTS

---

Engineering and Computing Education, Education Technology and Innovation, Higher Education

## EDUCATION

---

- **Purdue University** West Lafayette, IN, USA  
*PhD in Engineering Education, Advisor: Prof. Alejandra J. Magana* Aug. 2021 – Present
- **Carnegie Mellon University** Kigali, Rwanda  
*Master of Science, Information Technology* Aug. 2017 – Dec 2018
- **Makerere University** Kampala, Uganda  
*Bachelor of Science in Software Engineering* Aug. 2010 – Jun 2014

## RESEARCH PUBLICATIONS

---

- **Joreen Arigye**, Joseph A. Lyon, Alejandra Magana, Elsje Pienaar. The Reflective Modeling Practitioner: Promoting reflective practices through computational modeling assignments. In *Educational Technology Research and Development* [Under review].
- **Joreen Arigye**, Alejandra Magana, Joseph A. Lyon, and Elsje Pienaar. Biomedical and Agricultural Engineering Undergraduate Students Programming Self-Beliefs and Changes Resulting from Computational Pedagogy. In *American Society of Engineering Education (ASEE) Annual Conference and Exposition* [Under review].
- Yashin Brijmohan, Moses Olayemi, Viyon Dansu, Ifeoluwa Babalola, Yasir Gamiieldien, Ijeoma Ezika, **Joreen Arigye**, Uchenna Asogwa, Collins N Vaye. African Diaspora Engineering Education Student Experiences at US Universities: A Collaborative Autoethnographic Study. In *World Engineering Education Forum & The Global Engineering Deans Council (WEEF/GEDC) with the African Engineering Education Association* Cape Town, SA. Nov 2022 [Peer Reviewed].

## TEACHING EXPERIENCE

---

- **Python Instructor** West Lafayette, IN, USA  
*Gifted Education Research and Resource Institute, Purdue University* Jul 22 - Jul 2022
  - **Introduction to Python:** to 9 -12<sup>th</sup> grade students at a residential summer camp.
- **Node.js Instructor** Kampala, Uganda  
*Refactory, Clarke International University* Nov 19 - Jul 2021
  - **Server-side development:** with NodeJS, Pug, MongoDB, Git, TDD.
- **Data Analysis Instructor** Kampala, Uganda  
*Upskill, The Innovation Village* Mar 20 - Mar 2020
  - **Data analysis:** online sessions on the basic steps of a data science project.
- **Guest Instructor** Cape Town, South Africa  
*LaunchLab, Stellenbosch University Techpreneurship Centre* Jul 21 - Jul 2021
  - **Introduction to Git and GitHub:** at the Data Boot camp.
- **Graduate Teaching Assistant** Kigali, Rwanda  
*Carnegie Mellon University* Aug 18 - Dec 2018
  - **Java For Smartphone Development:** Collaborated on creating assignments, grading student, and advising/mentoring students.
  - **Tech Stack:** Java, Android, OOP, Firebase

## WORK EXPERIENCE

---

- **Graduate Research Assistant** West Lafayette, IN, USA  
*Purdue University* *Aug 21 - Present*
  - **Computational modeling** : Collaborate on research projects, currently working on model based learning, specifically computational modeling in disciplinary engineering classes.
- **Data Analyst** Kampala, Uganda  
*Engie Energy Access* *Feb 2019 - Jul 2021*
  - **Data engineering**: Created and maintained routine scripts in the analytics database to meet analytics and reporting needs across the business.
  - **Data analysis**: Met requests for analysis, visualisations and insights from different departmental stakeholders.
  - **Technical training**: Conducted training of team members on data tools/skills to grow data analysis capacity.
  - **Experimentation**: Gathered requirements, designed, and collected data for A/B testing and experiments.
  - **Machine learning**: Maintained machine learning models to inform business interventions.
  - **Tech Stack**: Python, SQL, AWS, Redshift, Git, PySpark, JIRA, Jupyter Notebook, Airflow
- **Data Intern** Kampala, Uganda  
*Engie Energy Access* *Jun 2018 - Aug 2018*
  - **Analysis and visualization**: Performed experimentation and analytics for solar loan repayment interventions.
  - **Tech Stack**: Python, SQL, JIRA
- **Business Process Analyst** Kampala, Uganda  
*UMEME* *Apr 17 - Aug 2017*
  - **Software product management**: Co-ordinated the implementation of a company-wide off the shelf HR system for over 1000 employees.
  - **Business process analysis** : Supported in the identification, design, and execution of business process re-engineering to drive efficiency.
- **Software Developer** Kampala, Uganda  
*InfoTronics Business Systems* *Oct 16 - Jun 2017*
  - **Software coding**: Developed 3 information systems that capture data and provide reporting dashboards.
  - **Requirements analysis**: Conducted requirements elicitation and system testing.
  - **Data management**: Performed data input, cleaning, and analysis as per client requirements.
  - **Training**: Trained clients on how to use systems.
  - **Tech Stack**: C#, SQL
- **Supply Chain Management Apprentice** Kampala, Uganda  
*Medical Access Uganda Limited* *Dec 14 - Sep 2016*
  - **Software product management**: Coordinated implementation and testing company software with contractors.
  - **Data analysis**: Analysed data for monitoring and evaluation activities.
  - **Business process analysis**: Managed the business process review for ISO certification.
  - **Supply chain**: Supported in procurement, warehousing and distribution of ARV's in Uganda.
  - **I.T. support**: Run applications and network help desk and provide technology support including installation, maintenance and troubleshooting.
  - **Tech Stack**: MySQL, Advanced Excel, Microsoft Visio
- **Software Engineering Intern** Kampala, Uganda  
*Medical Access Uganda Limited* *Jun 2013 - Aug 2013*
  - **Software coding**: Developed a Windows web service as part of the company's integration process.
  - **Tech Stack**: ASP.Net

- **Speaker**

*Women in Tech CMU Africa*, Research or professional path (11/2021)

*DataFest Africa*, Getting the workforce ready for Data Science opportunities (04/2021)

*ENGIE Energy Access*, IWD talk on inspiring women to join tech industry (03/2020)

*Women in ML and Data Science*, Data Science to inform business in the Energy (01/2020)

*Pyladies Kampala*, About Data Science in industry (11/2020)

*Coding Girls*, How to be deliberate about gaining technical skills (08/2019)

*IBM Research Africa*, Data to develop sustainable energy and financial inclusion in Africa (05/2019)

- **Judge**

*Educating The Children Kampala*, Cohort 3 Final presentations for the code queens program (12/2020)

*Educating The Children Kampala*, Cohort 2 Final presentations for the code queens program (09/2019)

- **Panelist**

*African Women In Tech*, On resources, skills, challenges regarding data analytics (02/2020)

*Chinese Embassy Pretoria*, Africa and China relations in Education and Leadership (02/2020)

- **Leadership Training**

*Mandela Institute for Development Studies*, Leadership fundamental skills development (06/2020)

*Mandela Institute for Development Studies*, Inaugural leadership development programme (08/2019)

- **Service**

*Vice President Membership, Techy Talkers Toastmasters CMU Africa* (2017/2018)

- **Volunteer**

*Kakukuru Primary School, Nyakayojo* Teaching Maths and Science (2009/2010)

*Conservation Effort for Community Development*: Youth empowerment and environmental conservation (2009/2010)

- **Awards**

2<sup>nd</sup> place - Facebook CMU-Africa hackathon (04/2018)

Mandela Institute for Development Studies Scholarship (08/2017)

## TECHNICAL SKILLS

---

- **Programming**

Python, NodeJS, C#, Java, ASP.Net, JavaScript, Android, Matlab, HTML, CSS, Pug, L<sup>A</sup>T<sub>E</sub>X

MySQL, SqlServer, MongoDB, SQLite, NEO-4J, Cypher, PostgreSQL, SPSS, Amazon Redshift

- **Applications**

Windows CLI, Linux, Vi/Vim, Airflow, Git, Jupyter Notebooks, Google Colab, JIRA, Postman

- **Languages**

English, Runyankore, Luganda, abit of Swahili & French