

Joreen Arigye

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RESEARCH INTERESTS

My research interests are in Computing & Data, Education Technology & Innovation, STEM Education, and Education for Development in Africa

EDUCATION

- **Purdue University** West Lafayette, IN, USA
PhD in Engineering Education, Prof. Alejandra J. Magana & Prof. Senay Purzer Aug 2021 – Present
- **Carnegie Mellon University** Kigali, Rwanda
Master of Science in 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 2023* [Approved].
- 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

- Guest Instructor** West Lafayette, IN, USA
Purdue University Jan 2023 - Jan 2023
 - **Intro to Google Colab**: ME 597 Industrial IoT Implementation for Smart Manufacturing
- Python Instructor** West Lafayette, IN, USA
Gifted Education Research and Resource Institute, Purdue University Jul 2022 - Jul 2022
 - **Intro to Python**: to 9 -12th grade students at a residential summer camp.
- Node.js Instructor** Kampala, Uganda
Refactory, Clarke International University Nov 2019 - Jul 2021
 - **Server-side development**: with NodeJS, Pug, MongoDB, Git, TDD
- Data Analysis Instructor** Kampala, Uganda
Upskill, The Innovation Village Mar 2020 - 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 2021 - Jul 2021
 - **Intro to Git and GitHub**: at the Data Boot camp.
- Graduate Teaching Assistant** Kigali, Rwanda
Carnegie Mellon University Aug 2018 - Dec 2018
 - **Design Patterns for Smartphone Development**: Grading students, organising recitations, and advising/mentoring students in Java, Android, OOP, Firebase.

WORK EXPERIENCE

- **Graduate Research Assistant** West Lafayette, IN, USA
Purdue University *Aug 2021 - Present*
 - **Research process activities:** Assisting principal investigator with research projects, currently working on model-based learning, specifically computational modeling in disciplinary engineering classes.
 - **Data collection, cleaning and analysis:** Designing survey instruments, collecting and analysing data.
 - **Publications:** Writing research papers.
 - **Lab logistics:** Routine team meetings and presentations, mentoring new research assistants.
- **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, visualizations, 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 visualisation:** Performed experimentation and analytics for solar loan repayment interventions.
 - **Tech Stack:** Python, SQL, JIRA
- **Business Process Analyst** Kampala, Uganda
UMEME *Apr 2017 - Aug 2017*
 - **Software product management:** Coordinated 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 2016 - Jun 2017*
 - **Software coding:** Developed 3 information systems that capture data and display business reports.
 - **Requirements analysis:** Conducted requirements elicitation and unit, system and integration 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 2014 - Sep 2016*
 - **Software product management:** Coordinated the implementation and testing of the company information system 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 ARVs to health centers in Uganda.
 - **I.T. support:** Ran help desk and provided I.T support e.g. installation, maintenance and troubleshooting.
 - **Tech Stack:** MySQL, Advanced Excel, Microsoft Visio
- **Software Engineering Intern** Kampala, Uganda
Uganda Revenue Authority *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, *Nov 2021*

DataFest Africa, Getting the workforce ready for Data Science opportunities, *Apr 2021*

ENGIE Energy Access, IWD talk on inspiring women to join tech industry, *Mar 2020*

Women in ML and Data Science, Data Science to inform business in the Energy, *Jan 2020*

Pyladies Kampala, About Data Science in industry, *Nov 2020*

Coding Girls, How to be deliberate about gaining technical skills, *Aug 2019*

IBM Research Africa, Data to develop sustainable energy and financial inclusion in Africa, *May 2019*

- **Judge**

Educating The Children Kampala, Cohort 3 Final presentations for the code queens program, *Dec 2020*

Educating The Children Kampala, Cohort 2 Final presentations for the code queens program, *Sept 2019*

- **Panelist**

Chinese Embassy Pretoria, Africa and China relations in Education and Leadership, *Feb 2020*

- **Leadership Training**

Mandela Institute for Development Studies, Leadership fundamental skills development, *Jun 2020*

Mandela Institute for Development Studies, Inaugural leadership development programme, *Aug 2019*

- **Service**

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

- **Volunteer**

Anj Data Management Solutions Ltd, Technical Advisor and Co-founder, *2021/2022*

Verve couture Kampala, Clothing retail and store management, *2016*

Kakukuru Primary School Nyakayoyo, Community Service teaching Maths and Science, *2009*

Conservation Effort for Community Development, Youth advocacy & environment conservation, *2009*

- **Awards**

Equip Training UK, Certificate: Level 3 Award in Education and Training, *Feb 2021*

Facebook(Meta) CMU-Africa hackathon 2nd place, *Apr 2018*

Mandela Institute for Development Studies Scholarship, *Aug 2017*

TECHNICAL SKILLS

- **Programming**

Python, NodeJS, C#, Java, ASP.Net, JavaScript, Android, Matlab, HTML, CSS, Pug, PySpark, L^AT_EX, R
MySQL, SqlServer, MongoDB, SQLite, Neo-4J, Cypher, PostgreSQL, SPSS, Amazon Redshift

- **Applications**

Windows CLI, Linux, Vi/Vim, Airflow, Git, Jupyter Notebooks, Google Collab, JIRA, Postman, PowerBI
Google Classroom, Confluence

- **Languages**

Proficient: English, Runyankore & Luganda **Basic:** Swahili & French