Joreen Arigye

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EDUCATION

- **PhD in Engineering Education**
  Purdue University (Prof.Şenay Purzer, Prof.Alejandra J. Magana)   2021 – Present

- **Master of Science in Information Technology**
  Carnegie Mellon University, Africa   2017 – 2018

- **Bachelor of Science in Software Engineering**
  Makerere University, Kampala Uganda   2010 – 2014

PUBLICATIONS

- J – Journal; C – Conference Proceedings; P – Poster Sessions; B - Book Chapters; A – ACM Article.

J1: **Joreen Arigye**, Joseph A. Lyon, Alejandra J. Magana, Elsje Pienaar (2024). The reflective modeling practitioner: Promoting self-regulation and self-confidence in computational modeling and simulation Practices. In International Journal of Engineering Education, 40(1), 179–195.

J2: Alejandra J. Magana, **Joreen Arigye**, Abasiafak N. Udosen, Joseph A. Lyon, Parth Joshi, Elsje Pienaar (2024). Scaffolded team-based computational modeling and simulation projects for promoting representational competence and regulatory skills. In the International Journal STEM of Education, 11(1), 34–33. doi.org/10.1186/s40594-024-00494-3.

J3: **Joreen Arigye**, Alejandra J. Magana, Elsje Pienaar. Commitment to team coordination: Reflections from undergraduate engineers following three team projects. [*In Review*].

C1: Şenay Purzer, Wei Zakharov, Carla Zoltowski, **Joreen Arigye** (2024, Jun). Developing the design reasoning in ethical design and data lifecycle management. In the American Society of Engineering Education (ASEE) Annual Conference and Exposition, Portland, OR, USA. doi.org/10.18260/1-2–47172

C2: **Joreen Arigye** (2024, May). Exploring the landscape of online coding education in Africa: A literature review. In the 47th MIPRO ICT and Electronics Convention (MIPRO), 678–683, Opatija, Croatia. doi.org/10.1109/MIPRO60963.2024.10569900.

C3: Moses Olayemi, Daniel Adeniranye, Viyon Dansu, **Joreen Arigye**, Mary Benjamin, Ifeoluwa Babalola (2024, Mar). From virtual premises to real promises: Tracking the formation of the African engineering education fellows in diaspora. In The 68th Annual Meeting of the Comparative and International Education Society (CIES), Miami, FL,USA.

C4: **Joreen Arigye**, Abasiafak N. Udosen, Parth P. Joshi, Alejandra J. Magana (2023, Oct). The evolution of team coordination commitments in the context of computational projects. In the 2023 IEEE Frontiers in Education Conference (FIE), 1-5, College Station, TX, US. doi.org/10.1109/FIE58773.2023.10343201.

C5: **Joreen Arigye**, Alejandra J. Magana, Joseph A. Lyon, and Elsje Pienaar (2023, Jun). 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, Baltimore, MA, USA. doi.org/10.1109/10.18260/1-2–42275.

C6: Yashin Brijmohan, Moses Olayemi, Viyon Dansu, Ifeoluwa Babalola, Yasir Gamieldien, Ijeoma Ezika, **Joreen Arigye**, Uchenna Asogwa, Collins N. Vaye (2022, Nov). African diaspora engineering education student experiences at US universities: A Collaborative Autoethnographic Study. In the IEEE IFEES World Engineering Education Forum - Global Engineering Deans Council (WEEF-GEDC), 1-7, Cape Town, South Africa. doi.org/10.1109/WEEF-GEDC54384.2022.9996261.

Dd: **Joreen Arigye** (2023, May). Exploring computational modelling and simulation experiences of undergraduate engineering students (Doctoral dissertation. Purdue University) [*In Progress*].

P1: Wei Zakharov, Şenay Purzer, Carla B Zoltowski, **Joreen Arigye**, Juan Jose Ruiz Maza Nava, Sarah M Sewell (2024, Jun). Prioritizing data life cycle ethical management for shaping next generation researchers. At the Improving Undergraduate STEM Education (IUSE) Summit, Washington, D.C., USA.

P2: **Joreen Arigye** (2024, Feb). Learning to code online: Exploring the African landscape. At the Collaborative Network for Engineering and Computing Diversity (CONECD) Conference. Arlington, VA. USA. Best Poster.

P3: Sophia Ahn, Nidhi Shindhe, **Joreen Arigye**, Daniel Koh, Amy Maselli (2023, Nov). A cost benefit analysis of the co-surgeon model in DIEP flaps and other microsurgical procedures. At the Warren Alpert Medical School Academic Symposium, Brown University. repository.library.brown.edu/

P4: **Joreen Arigye**, Alejandra J. Magana, Joseph A. Lyon, Elsje Pienaar (2023, Mar). Biomedical and Agricultural Engineering Undergraduate students Programming self-beliefs and changes resulting from computational scaffolding. At the 49th National Society of Black Engineers (NSBE) Convention, Technical Research Exhibition, Kansas City, Missouri, USA.

P5: Abasisafak Udosen, **Joreen Arigye**, Alejandra J. Magana, Elsje Pienaar (2024, Mar). Predicting quantized students team-based reflection data using supervised machine learning approaches. At the 50th National Society of Black Engineers (NSBE) Convention/Engineering Community, Technical Research Exhibition, Atlanta, Georgia, USA. doi.org/10.13140/RG.2.2.26313.56163.

Pp: **Joreen Arigye** (2024, Feb). Coordination commitments during computational modeling. At the Purdue University 3rd Annual Symposium of Graduate Women in Engineering Network, Purdue University, (PechaKucha Presentation). Awarded Travel Grant.

Pp: **Joreen Arigye** (2019, May). Leveraging data to develop sustainable energy and financial inclusion in Africa .At the SDM Workshop for Data Mining in/for Africa 2019 by IBM Research Africa, (Workshop Presentation) Nairobi, Kenya.

B1: Şenay Purzer and **Joreen Arigye** (2025). Engineering design reasoning for conscientious decision-making. In Lyn D. English, Timothy Lehmann (Eds.), Ways of Thinking in STEM-based Problem Solving Teaching and Learning in a New Era. (1st ed.,). Routledge. isbn/9781032520339.

A1: Kirabo Lynn (2019). The one about resilience, energy, culture, and crafting. In XRDS : Crossroads, The ACM Magazine for Students, 26(2), 60-63. doi.org/10.1145/3368079

Teaching Experience

Purdue University: West Lafayette IN

- Faculty Apprentice: ENE 506 Content, Assessment, and Pedagogy (Spring 2024)
- Guest Instructor: Introduction to Google Colab for ME 597 IoT for Smart Manufacturing (Spring 2023)
- Python Instructor: Python Programming at the Gifted Education Research Institute (Summer 2022)

Refactory at Clarke International University: Kampala, Uganda

- NodeJS Instructor: Server-side Development with NodeJS (Nov 2019 - Jul 2021)

Upskill at the Innovation Village: Kampala, Uganda

- Data Science Instructor: Basic steps of a data science pipeline (Mar 2020)

LaunchLab at Stellenbosch University: Cape Town, South Africa

- Guest Instructor: Introduction to Git and GitHub (Jul 2021)

Carnegie Mellon University Africa: Kigali, Rwanda

- Teaching Assistant: 18-641 Design Patterns for Smartphone Development - Java and Andriod (Fall 2018)

Work Experience

Graduate Research Assistant: Purdue University, Aug 2021 - Present

- In the ROCkETEd and ELO labs, I conducted literature reviews, designed and executed experimental studies, and managed data collection and analysis. Collaborated with team on proposals, abstracts, and manuscripts, contributing to multiple publications and presentations. Additionally, I mentored undergraduate students in research methods and data analysis, enhancing their academic growth and engagement in the research process.

Software Engineering Intern: Software and Application Innovation Lab, Boston University, May - Aug 2023

- Developed a Docker pipeline for the deployment of SPICE-based simulator PACT and Visual PACT and a Python pipeline to enhance the accessibility of large sas7bdat data for BU School of Medicine.

Data Analyst: Fenix International (Now Engie Energy Access), Feb 2019 - Jul 2021

- Managed the analytics database scripting needs for business reporting. Conducted team training to boost data analysis capacity, gathered A/B testing requirements, and designed experiments. Oversaw the maintenance of machine learning models, ensuring data-driven business interventions.

Data Intern: Fenix International (Now Engie Energy Access), Jun 2018 - Aug 2018

- Performed experimentation and analytics for solar loan repayment interventions.

Business Process Analyst: UMEME, Apr 2017 - Aug 2017

- Coordinated the successful implementation of a company-wide off-the-shelf HR system for a workforce of over 1000 employees. Provided support in identifying, designing, and executing business process re-engineering initiatives to enhance overall efficiency.

Software Engineer: InfoTronics Business Systems, Oct 2016 - Jun 2017

- Developed three information systems for data capture and business reporting, involving requirements elicitation and comprehensive testing. Executed data input, cleaning, and analysis based on client specifications. Additionally, provided client training on system usage.

Supply Chain Management Apprentice: Medical Access Uganda Limited, Dec 2014 - Sep 2016

- Coordinated implementation and testing of the company's information system with contractors, analyzed data for monitoring and evaluation, managed business process review for ISO certification, supported procurement and distribution of ARVs to health centers in Uganda, and ran a help desk providing IT support including installation, maintenance, and troubleshooting.

Software Engineering Intern: Uganda Revenue Authority, Jun 2013 - Aug 2013

- Developed a Windows web service as part of the company's integration process.

Awards · Talks · Service

Awards and Certifications

- Purdue Engineering GradTrack, Mentorship Award Fall 2024

- National Society of Black Engineers (NSBE), Travel Award Mar 2024

- Collaborative Network for Engineering and Computing Diversity (CoNECD), Travel Award Feb 2024

- Graduate Women in Engineering (GWEN), Travel Award Feb 2024

- Certificate of attendance, AI Workshop by Purdue Digital Agriculture, Aug 2024

- Certificate of attendance, 9th International research symposium for problem based learning: Transforming Engineering Education (TEE2023), by MIT, Harvard and Alborg University, June 2023.

- Educating The Children, Panel and Judge for code queens presentations, Kampala Sept 2019 & Dec 2020

- Mandela Institute for Development Studies Scholarship (MINDS), Graduate Scholarship Award Aug 2017

- Equip Training UK Certificate, Level 3 Certificate in Education and Training, Feb 2021

- Mandela Institute for Development Studies (MINDS), Certificate in Leadership Training, 2017 & 2020

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

Talks

- Women in Tech, Research or Professional path, CMU Africa Nov 2021

- DataFest Africa, Getting the workforce ready for data science opportunities, Innovation village Apr 2021

- Engie Energy Access, Social media feature for women's day to inspire more women into tech, Mar 2020

- Pyladies Kampala, Data science in industry, Outbox Nov 2020

- Coding Girls, How to be deliberate about gaining technical skills, Cavendish University Aug 2019

- Data science in Africa workshop, Data Science for Health, Pulse Lab Kampala Aug 2016

- African Women in Tech, Panel on resources, skills, challenges, and data analytics workflows, Feb 2020

- Women in Machine Learning & Data Science, Panel and talk on leveraging ML in energy, Jan 2020

- Chinese Embassy, Panel on Africa and China relations in education and leadership, Pretoria Aug 2019

Service

- Graduate Mentor, Purdue Graduate Education GradTrack Program, 2024

- Journal Reviewer, Education and Information Technologies, 2023/2024

- Graduate Student Association Representative for Engineering Education, 2023/2024

- Featured as Change maker in Spotlight, MINDS Africa, 2023

- Member, Black Graduate Student Association, 2022/2024

- Member, National Society of Black Engineers Graduate Committee, 2023

- Member, African Engineering Education Fellows (AEEF) in Diaspora, 2022

- Member, Engineering Education Research (EERN) in Africa, 2022

- Volunteer Education Advisory, Island of Hope (Non-profit for climate advocacy), 2022/2023

- Volunteer Technical Advisor and Cofounder: AnJ Data Management Solutions Ltd, 2021/2022

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

- Volunteer, Conservation Effort for Community Devt, Youth Advocacy & Environment, 2009/2010