Joreen Arigye

Neil Armstrong Hall, 1300, 701 W Stadium Ave, West Lafayette, IN 47907, USA

Email: jarigye@purdue.edu | Website: jarigye.github.io

RESEARCH INTERESTS

Engineering and Computing Education, Reflective Practices and Self-Regulated Learning in Computational Model-Based Reasoning Projects, Conscientious Engineering Design, Online Programming Education in Africa

EDUCATION

- **Purdue University**   West Lafayette, IN, USA
  PhD in Engineering Education   *Aug 2021 – Present*

  Advising Committee: Dr.Senay Purzer, Dr.Alejandra Magana, Dr.Jason Morphew

- **Carnegie Mellon University**   Pittsburgh, PA, USA
  Master of Science in Information Technology (Software Engineering & Data Science)   *Aug 2017 – Dec 2018*

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

PUBLICATIONS

Journals

- 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*

- Alejandra Magana, Joreen Arigye, Abasiafak Udosen, Joseph A. Lyon, Parth Joshi, Elsje Pienaar. Scaffolded Team-Based Computational Modeling and Simulation Projects for Promoting Representational Competence and Regulatory Skills.*[In review]*

Conferences

- Senay Purzer, Joreen Arigye, Carla B. Zoltowski, Wei Zakharov, Sarah M. Sewell, Juan Jose R. M. Nava, (2024, June). Conscientious Negotiation of Risks and Benefits: A Framework for Ethical Design and Data Reasoning. In *the American Society of Engineering Education (ASEE) Annual Conference and Exposition*, Portland, OR. *[In review]*

- Moses Olayemi, Daniel Adeniranye, Viyon Dansu, Joreen Arigye, Mary Benjamin, Ifeoluwa Babalola (2024, March). 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. *[In review]*

- Joreen Arigye (2024, May). Exploring the Landscape of Online Coding Education in Africa: A Literature Review. In *The 47th ICT and Electronics Convention, MIPRO,* Opatija, Croatia. *[In review]*

- Joreen Arigye, Abasiafak N. Udosen, Parth P. Joshi, and Alejandra J. Magana (2023, October). The Evolution of Team Coordination Commitments in the Context of Computational Projects. In *2023 IEEE ASEE Frontiers in Education Conference(FIE),* College Station, TX.

- Joreen Arigye, Alejandra J. Magana, Joseph A. Lyon, and Elsje Pienaar (2023, June). 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.

- Yashin Brijmohan, Moses Olayemi, Viyon Dansu, Ifeoluwa Babalola, Yasir Gamieldien, Ijeoma Ezika, Joreen Arigye, Uchenna Asogwa, Collins N. Vaye (2022, November). 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.

Teaching Experience

- Faculty Apprentice, Purdue University: ENE 506 Content, Assessment, and Pedagogy *Spring 2024*

- Guest Instructor, Purdue University: Intro to Google Colab ME 597 IoT for Smart Manufacturing *Spring 2023*

- Python Instructor, Purdue University: Python Programming, Gifted Education Research Institute *Summer 2022*

- NodeJS Instructor, Clarke International University: Server-side Devt with NodeJS, Refactory *Nov 2019 - July 2021*

- Data Science Instructor, The Innovation Village: Developing Data Science Project, Upskill, *March 2020*

- Guest Instructor, Stellenbosch University: Introduction to Git and GitHub, LaunchLab *July 2021*

- Graduate Teaching Assistant, Carnegie Mellon University: 18-641 Design Patterns for Smartphone Devt *Fall 2018*

Work Experience

- **Software Engineering Intern** — Boston, MA, USA
  Software and Application Innovation Lab, Boston University — *May 2023 - 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.

- **Graduate Research Assistant** — West Lafayette, IN, USA
  Purdue University — *Aug 2021 - Present*
  - Supporting professors in ROCkETEd and ELO research labs with data collection, cleaning, analysis, documentation and developing journal and conference articles, alongside mentoring undergraduate students.

- **Data Analyst** — Kampala, Uganda
  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** — Kampala, Uganda
  Engie Energy Access — *Jun 2018 - Aug 2018*
  - Performed experimentation and analytics for solar loan repayment interventions.

- **Business Process Analyst** — Kampala, Uganda
  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** — Kampala, Uganda
  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** — Kampala, Uganda
  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** — Kampala, Uganda
  Uganda Revenue Authority — *Jun 2013 - Aug 2013*
  - Developed a Windows web service as part of the company's integration process.

- **Tech Stack**

  Python, NodeJS, C, Java, ASP.Net, JavaScript, Android, Matlab, HTML, CSS, Pug, PySpark, LaTeX, R, MySQL, SqlServer, MongoDB, SQLite, Neo-4J, Cypher, PostgreSQL, SAS, SPSS, Amazon Redshift, Windows CLI, Linux, Vi/Vim, Airflow, Git, Jupyter Notebooks, Google Colab, JIRA, Postman, PowerBI, Confluence

- **Poster Presentations**

  - National Society of Black Engineers (NSBE) Kansas City, MO. *Mar 2023*
  - Collaborative Network for Engineering and Computing Diversity(CoNECD) Arlington, VA. *Feb 2024*
  - National Society of Black Engineers (NSBE) Atlanta, GA. *Mar 2024*

- **Conference Presentations**

  - IEEE ASEE Frontiers in Education(FIE), *The Evolution of Team Coordination Commitments in the Context of Computational Projects,* College Station, TX. *Oct 2023*
  - American Society of Engineering Education, *Biomedical and Agricultural Engineering Undergraduate Students' Programming Self-Beliefs and Changes Resulting from Computational Scaffolding* Baltimore, MA. *Jul 2023*
  - SDM Workshop for Data Mining in/for Africa 2019 by IBM Research Africa, *Leveraging data to develop sustainable energy and financial inclusion in Africa,* Nairobi, Kenya. *May 2019*

- **Invited Talks, Panels and Features**

  - Women in Tech: CMU Africa, Research or Professional path, *Nov 2021*
  - DataFest Africa: The Innovation Village, Getting the workforce ready for Data Science opportunities, *Apr 2021*
  - ENGIE Energy Access: Social Media Feature for Intl Women's Day to Inspire Women into Tech, *Mar 2020*
  - Pyladies Kampala: Outbox, About Data Science in industry, *Nov 2020*
  - Feature in XRDS Crossroads: An ACM Magazine: The one about resilience, energy, culture, and crafting, *Nov 2019*
  - Coding Girls: Cavendish University, How to be deliberate about gaining technical skills, *Aug 2019*
  - Data Science in Africa Workshop: Pulse Lab Kampala, Data Science for Health, *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 data science in energy sectors, *Jan 2020*
  - Chinese Embassy Pretoria: Panel on Africa and China relations in Education and Leadership, *Aug 2019*
  - Educating The Children Kampala: Panel judging code queens program final presentations, *Sept 2019 & Dec 2020*

- **Awards and Certifications**

  - National Society of Black Engineers 2024 All Expenses Travel Award, *March 2024*
  - Collaborative Network for Engineering and Computing Diversity Travel Award: $1500, *Feb 2024*
  - Graduate Women in Engineering Travel Grant Award: $2000, *Feb 2024*
  - Mandela Institute for Development Studies Scholarship award for Master's Tuition, *Aug 2017*
  - Equip Training UK Certificate: Level 3 Certificate in Education and Training, *Feb 2021*
  - Mandela Institute for Development Studies Certificate in Leadership Training, *Aug 2017 & Jun 2020*
  - CITI Program Certificate in Group 2 Social Behavioural Research Investigators and Key Personnel, *Aug 2011*
  - Facebook(Meta) CMU-Africa Hackathon 2nd place, *Apr 2018*

- **Service**

  - CoE Graduate Student Association Representative for ENE: Purdue University *2023/2024*
  - Volunteer Education Advisory: Island of Hope (Environmental 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 Conservation *2009/2010*