Dolica Akello-Egwel

(doh-lih-kah)

Tech-Art Doula

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technical experience

- **Languages**: Python, C, CUDA, Bash, Fortran, LaTeX, Markdown
- **Libraries**: NumPy, SciPy, Matplotlib, h5py, PyQt, pytest, opencv-python, ollama
- **Software & Tools**: Git, Jupyter, uv, Conda/Mamba, Label Studio

employment history

Creative Data Specialist Technician 2023 - Present
London College of Communication

- Support students in exploring the ways in which Python, Machine Learning, and Generative AI can be incorporated into their arts practice.
- Provide beginner and advanced workshops, one-to-one support, and written tutorials to promote student learning and encourage experimentation.
- Champion good technical practices in the arts so that projects are easier to use, debug, and revisit, including creating and delivering the college's first GitHub workshop.
- Created two projects for the annual technicians exhibition that demonstrate what Python, AI, and Machine Learning can do within an arts context to spark curiosity in students and staff.
- Run regular demos and orientations for different degree cohorts to increase student interest in creative technology.
- Manage specialist equipment loans and provide setup guidance.

Scientific Software Engineer 2018 - 2023
Science and Technology Facilities Council

- Achieved significant speed improvements in the Mantid Imaging software by introducing CUDA-implementations of some of its most resource-intensive algorithms
- Led a major rewrite of the Mantid Imaging dataset model and devised a new dataset tree view that displays the data structure to the user in a more coherent fashion
- Engineered a tool for translating information from neutron experiment HDF5 files into meshes so that scientists can easily visualise disk choppers
- Implemented an API for interacting with the Hamilton Microlab Syringe Pump, and then wrote a corresponding CLI and GUI for providing up-to-date position information to users
- Authored a comprehensive GUI test suite for validating NeXus Constructor workflows

Intern Programmer 2016 - 2017
Quantemol

- Developed scripts for parsing information from chemistry data files and converting them to a format suitable for the database
- Updated the database web interface to include citations and molecule content to improve search output

education

MSc Scientific Computing 2018
University College London

BSc Computer Science and Mathematics 2016
Queen Mary, University of London

publications

Akello-Egwel, Dolica, Charles Leedham-Green, Alastair Litterick, Klas Markström, and Søren Riis. 2025. "Condorcet Domains on at Most Seven Alternatives." Mathematical Social Sciences 133 (January): 23–33. https://doi.org/10.1016/j.mathsocsci.2024.12.002.

Tygier, S., D Akello-Egwel, J. Allen, et al. 2023. "Tomographic Reconstruction with Mantid Imaging." Journal of Physics: Conference Series 2605 (1): 012017. https://doi.org/10.1088/1742-6596/2605/1/012017.

Tennyson, Jonathan, Sara Rahimi, Christian Hill, et al. 2017. "QDB: A New Database of Plasma Chemistries and Reactions." Plasma Sources Science and Technology 26 (5): 055014. https://doi.org/10.1088/1361-6595/aa6669.

awards & honours

STFC Staff Instant Award 2022
Drove the development of a new group aimed at understanding and improving psychological safety in the workplace. Drew on ideas from Continuous Improvement to pioneer tools for tracking the progress of group projects and smoothing the transition when members come and go.

STFC Staff Instant Award 2021
Delivered much-needed improvements in the Mantid Imaging code that enhanced its functionality and user experience.

STEM Ambassador Gold Badge 2020
Volunteered 50+ hours for STEM outreach activities at schools and museums.

UCL Research Images as Art - Shortlist 2018
Created a set of computer-generated plots for my Master's thesis that were judged on their aesthetic value. The plots were shortlisted by a panel of judges and went through to the next stage of the competition.

Queen Mary Principal's Prize - Outstanding Final Year Project 2016
Improved on what was previously the best-known algorithm for finding maximal Condorcet Domains. The code was then run on a supercomputer and successfully resolved an open problem in the field of Voting Theory.