Dennies Bor

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Scholar: Google Scholar

Professional Summary

Computational scientist specializing in Earth Systems and Geoinformation Sciences with extensive experience in numerical modeling, spatial analysis, remote sensing, and GIS application development. Proficient in Python programming and cloud-based infrastructure.

Skills Summary

- **Geospatial Data Processing:** Remote sensing, satellite imagery, GIS (ENVI, GDAL, geopandas, rasterio).
- **GIS Application Development:** Web mapping (NodeJS, LeafletJS, Python, JavaScript).
- **Scientific Programming:** Python for spatial analysis, modeling, data visualization.
- **Cloud Solutions & DevOps:** AWS, GCP, Docker, GitHub Actions (CI/CD).
- **Computational Modeling:** Numerical and spatial modeling for environmental resilience.
- **Econometric Analysis:** Econometric modeling, input-output analysis, uncertainty quantification.

Education

- **George Mason University** — Fairfax, VA, USA
  PhD in Earth Systems and Geoinformation Sciences (Advisor: Dr. Edward Oughton) — *Sep 2023 – Present*

  Relevant Coursework: *Computational Physics, Applied Electromagnetics, Atmospheric Physics, Earth Image Processing, GIS Algorithms, Spatial Computing, Hyperspectral and Multispectral Imaging*
  GPA: *3.96*

- **Technical University of Kenya** — Nairobi, Kenya
  BEng in Aeronautical Engineering (First Class Honors) — *Sep 2013 – May 2019*

Experience

- **Graduate Research Assistant** — George Mason University, VA, USA
  GIS, Spatial Analysis, Infrastructure Resilience — *May 2022 – Present*
  - Developed interactive web-based GIS applications for infrastructure resilience (Link).
  - Built socio-economic impact dashboards and spatial analysis models.
  - Conducted numerical simulations and uncertainty quantification using cloud computing.

- **Engineering Intern** — Broglio Space Center, Malindi, Kenya
  Satellite Operations, Remote Sensing — *Aug 2018 – Nov 2018*
  - Supported satellite tracking and telemetry for geospatial applications.
  - Assisted in the maintenance and operation of RF communication systems.

Projects & Proposals

- **A Reproducible Method for Mapping Electricity Transmission Infrastructure for Space Weather Risk Assessment:** Preprint — Project Link
- **A Physics-Engineering-Economic Model Coupling Approach for Estimating Socio-economic Impacts of Space Weather:** Preprint — GitHub
- **Assessing Socio-economic Impacts of Space Weather on Satellite Constellations:** GitHub
- **Computer Vision for Power Substation Asset Detection:** GitHub

Professional Affiliations

- **National Center for Atmospheric Research** — USA
  Early Career Faculty Innovators Program — *2023 – 2025*

- **African Institute of Mathematical Sciences** — South Africa
  Africa Data Science Intensive Program — *2022*

References

Available upon request.