PATRICK BOATENG

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RESEARCH INTEREST

- Finite element analysis of structures
- Risk analysis of structures
- Seismic retrofitting
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EDUCATION

Bachelor's degree **Sep 2017 - Nov 2021**

Kwame Nkrumah University of Science and Technology

- **Programme**: Bachelor of Science in Civil Engineering
- **Honor**: First Class [3.76/4.0] - *Scholaro GPA Calculator*
- **Thesis**: Predicting the compressive strength of concrete using machine learning techniques.
- **Key Courses**: Introduction to Finite Element Methods | Algebra | Numerical Analysis | Statistics and Probability | Differential Equation | Soil and Rock mechanics | Computer Aided Design (AutoCad) | Computer Programming (MATLAB) | Construction Management

HONORS AND AWARDS

- Provost Excellent Students Awards, College of Engineering (KNUST) in year 3
- Provost Excellent Students Awards, College of Engineering (KNUST) in year 4

WORK EXPERIENCE

Assistant Consulting Engineer **Sep 2022 - Present**

Heureka Consult Limited **Full Time**

- Performed quality assurance and quality control procedures for construction projects, including overseeing the Cardinal Namdini gold mine's water storage and tailings dams.

- Generated project and laboratory reports for the client.
- Conducted geotechnical site investigations for road projects, such as the Accra-Ofankor road rehabilitation.
- Analyzed laboratory test results and made engineering judgments.
- Conducted an assessment of structural soundness and stability of pre-existing structures.
- Developed a Microsoft Excel add-in capable of soil classification, accommodating both the **Unified Soil Classification System** and the **American Association of State Highway and Transportation Officials** classification systems.

Site Engineer **Apr 2020 - Nov 2020**

Quatran Company Limited **Intern**

- Conducted site supervision and implemented Quality Assurance and Quality Control measures during the construction of the solvent extraction plant for Wilmar Africa.
- Ensured precise execution of structural drawings by interpreting and comprehending the drawings accurately.
- Prepared weekly progress reports summarizing all the works completed on-site.

RESEARCH EXPERIENCE

Concrete compressive strength prediction **Apr 2021 - Nov 2021**

- Employed various machine learning techniques to develop models for predicting the 28th day compressive strength of concrete. **Project link**

TECHNICAL SKILLS

- **Programming Languages**: Python | C | C++
- **Deep Learning Frameworks**: Pytorch
- **Machine Learning**: Scikit-learn | XGBoost
- **Data Analysis**: Pandas | Numpy
- **Software**: Microsoft Office Excel | Latex | AutoCad

PERSONAL PROJECTS

- **geolab**: An open-source software for geotechnical engineering analysis and modelling. **Project link**
- **makepackage**: A Python package for packaging python code. (*Contributor*) **Project link**

REFERENCES

Dr. Jones Owusu Twumasi

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