

# MOHAMMED AZHARI AHMED ZAKRIA

Civil, Structural, Geotechnical Engineer

## PROFILE

Civil, Structural, and Geotechnical Engineer with an M.Sc. in Structural Engineering and over 3 years of international experience in designing and analyzing building structures and telecom towers. I am skilled in structural and geotechnical modeling using ETABS, STAAD.Pro, Midas Gen, PLAXIS, and GeoStudio. Specialized in foundation systems, slope stabilization, and infrastructure risk mitigation across projects in Italy, Germany, and the Middle East. Experienced in static and dynamic verification for buildings and 3G–5G telecom structures. Complemented by research in self-healing high-performance concrete (UHPFRC). Fluent in Arabic, English, and Italian, with strong field, reporting, and cross-cultural collaboration skills.

**Available for travel and work and elsewhere.**

## CONTACT DETAILS

- Phone: +393511162150
- Address: Milano, Italy
- Email: [Mohammedazhari@mail.polimi.it](mailto:Mohammedazhari@mail.polimi.it)
- LinkedIn: [Mohammed Azhari](#)

## SKILLS

### DIGITAL SKILLS:

- ETABS.
- STAAD.PRO
- PAXIS.
- MS Project.
- Geo Studio / Slope W.
- EPANET.
- HEC-RAS
- Proficient user of Microsoft Office (Excel, Word, & Power Point).
- Computer Aided Drawing Software AUTODESK(AutoCAD, Revit, Navisworks 3D, Civil 3D).
- Paratie Plus Proficient user of ArcGIS, Cube, & Google Earth.

### SOFT SKILLS:

- Self-motivated.
- Planning and time management abilities.
- Excellent networking skills.
- Critical thinking.
- Work in a team and individually.
- Problem solving and decision-making ability.

## LANGUAGES

- Arabic: Mother Tongue Language.
- English: Full proficiency.
- Italian: Limited working proficiency.

## CERTIFICATIONS

- **CERM** (Certified from Politecnico di Milano, Milan).
- Design concrete reinforcement structures from Khartoum Training Center in March 2019.

## ACTIVITIES

- CERM (Civil Engineering for Risk Mitigation didactic programme in 2023).
- SEC (Sudanese engineering council in 2018).
- Teaching Assistant University of Bahri2018

## PROJECTS

- Structural design for SSLA SCS facilities – Baumholder, Germany.
- Roofing system design – Building 266, NSA-I, Bahrain.
- Structural integrity restoration (frames, joints, waterproofing) – Capodichino, Italy
- Structural repair works for Trident Pier 2 – NSA-II, Bahrain.
- (MANY OTHER PROJECTS)

## WORK EXPERIENCE

### STRUCTURAL ENGINEER: (OVER 4 YEARS) @ PROENG - MILAN, ITALY June 2022– present (Building Construction)

- Design and project management of building structures (concrete & steel).
- Expertise in risk assessment and structural monitoring for infrastructure projects.
- Proficient in structural analysis using advanced software (ETABS, STAAD.Pro, Midas Gen)
- Strong experience in geotechnical engineering, slope stabilization, and hydraulic engineering.
- Skilled in the preparation of digital maps for risk scenario representation and planning.
- Competent in preparing and reviewing technical reports and conducting structural verification (static & dynamic).

### CIVIL / GEOTECHNICAL ENGINEER: (2 Years) ECL LEONARDO - MILAN, ITALY Proeng in Milan June 2022– present (Telecommunication Construction)

- Performing static verifications for Radio Base Stations and telecommunication structures.
- Collaborating with major telecom companies including INWIT, CELLNEX, ILIAD, TIM, Fastweb, and Vodafone.
- Conducting electromagnetic field analysis of antennas and safety verification.
- Working with various technologies (3G, 4G, 5G) and antenna brands (Huawei, Ericsson, Nokia).
- Familiarity with ARPA requirements for electromagnetic emissions.

### SITE ENGINEER (4 Years) - @ SELF – EMPLOYED (Khartoum SDN).

*Jan 2014 – Jan 2018 (Construction Projects, Khartoum Sudan).  
Preparing Bills of Quantities for several types of projects.*

- Interpretation of structural and architectural drawings.
- Preparation of Bar Bending Schedules (BBS) for reinforcement works.
- Allocation of daily tasks to site laborers and work crews.
- Supervision of construction activities to ensure quality and compliance.
- Scheduling and tracking of materials used and available on-site.

## EDUCATION

### M.SC. CIVIL ENGINEERING FOR RISK MITIGATION.

**Politecnico di Milano ( 1st Univ ), Italy Mar. 2020 – Dec. 2022 . With score of ( 95/110 )**

### B.SC. (HONOUR) CIVIL ENGINEERING.

**University Of Bahri, Sudan. Sep. 2013 – Nov. 2018**

- The first on my college in civil engineering ( with score 3.52 / 4.00 ) Honor Class .
- Teaching Assistant in Subjects of structural and Geotechnical courses .

## *Cover Letter*

To whom it may concern,

I am Eng. Mohammed Azhari Ahmed Zakria, a Civil, Structural, and Geotechnical Engineer with over 8 years of international experience, currently based in Italy and eager to relocate to Saudi Arabia. At PRO&NG s.r.l., I have led the design and assessment of telecom towers, building retrofits, and geotechnical systems for major clients like INWIT, Vodafone, and TIM. I bring expertise in static/dynamic tower checks, EMF and ARPA compliance, slope stability (PLAXIS, GeoStudio), and telecom infrastructure delivery. My background aligns closely with TAWAL's mission to expand and optimize tower networks across KSA and beyond. I am excited by the opportunity to contribute to the Kingdom's ICT growth under Vision 2030 and would welcome the chance to join your dynamic engineering team.

# PORTFOLIO

AN OVERVIEW OF MY CONTRIBUTIONS THROUGHOUT MY CAREER

Y. 2025

# AREAS OF EXPERTISE

## CIVIL ENGINEERING (- Infrastructure planning and development

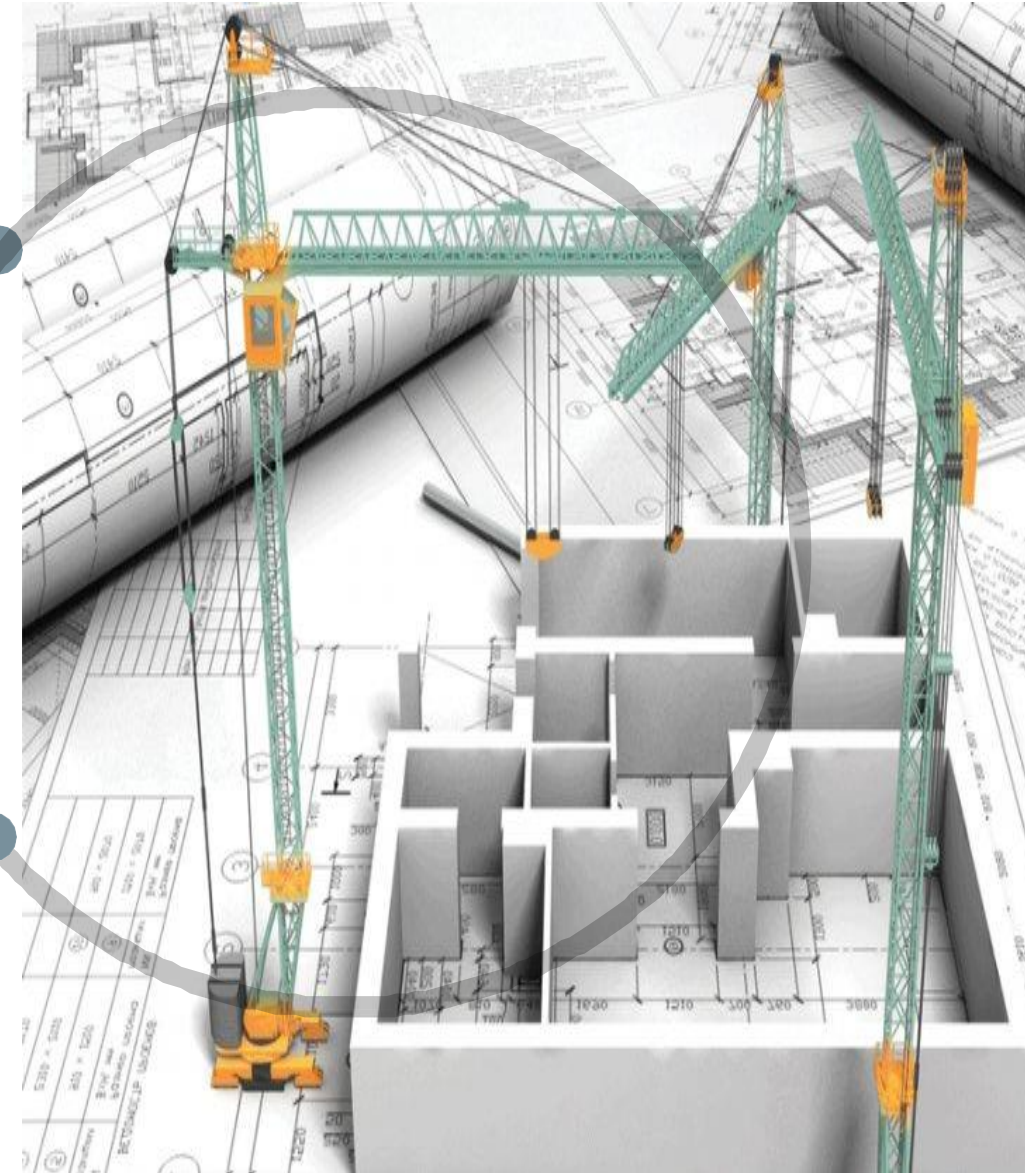
- Risk assessment and mitigation in urban and extra-urban projects
- Project management and site supervision)

## STRUCTURAL ENGINEERING (- Structural design of buildings (concrete & steel)

- Design and verification of telecommunication towers and antenna structures
- Static and dynamic structural analysis and safety verification
- Repair and strengthening of structural frames)

## Geotechnical Engineering (Slope stability and landslide risk assessment

- Foundation design and settlement analysis
- Soil-structure interaction and seismic analysis
- Earthworks, retaining walls, and excavation design
- Groundwater flow and contamination modelling)



# LARGE-SCALE PROJECTS

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## AMERICAN BASIN:

- Position: Civil / Structural / Geotechnical Engineer.
- Description: GC Security Infrastructure & Equipment, Baumholder Military Community (Germany).
- Tasks:
  - I. Designed and integrated modular security facilities (ACFs, SSA), including structural analysis, site grading, road access, and utility connections per USACE/Eurocode standards.
  - II. Performed geotechnical analysis and foundation design, evaluating soil bearing capacity and applying ground improvement methods for structural stability.
  - III. Engineered structural support for security systems (CCTV, biometric, X-ray), integrating MEP pathways and ensuring equipment protection within facility design.



# NAVAL SUPPORT ACTIVITY BUILDINGS

## ROOFING SYSTEM DESIGN:

- Position: Civil / Structural / Geotechnical Engineer.
- Discription: NSA-I, Bahrain.
- Tasks:
  - I. Structural assessment of existing roofs and load-bearing elements to ensure compatibility with new roofing systems.
  - II. Design of replacement roof structures, including truss or slab upgrades, using USACE and DoD design standards.
  - III. Civil works planning including roof drainage layout, waterproofing details, and integration with building envelope.
  - IV. Coordination of demolition and construction phases to ensure safety, site access, and minimal disruption to building operations..



# TELECOMMUNICATION TOWER DESIGN

## ITALIAN & INTERNATIONAL TELECOM COMPANIES:

- Position: Civil Telecommunication Engineer.
- Discription: Perform static analysis and structural verification
- Tasks:
  - V. Perform static analysis and structural verification for telecom towers and rooftop sites supporting 3G, 4G, and 5G antennas.
  - VI. Prepare detailed technical reports (PDM, PE) and drawings for permit approvals and structural upgrades.
  - VII. Conduct electromagnetic field (EMF) analysis and ensure compliance with ARPA safety regulations for antenna installations.
  - VIII. Design and coordinate fiber optic systems and permit documentation for operators like FiberCop and Open Fiber.



# Ultra-High Performance Concrete (UHPC)

## MASTER RESEARCHER:

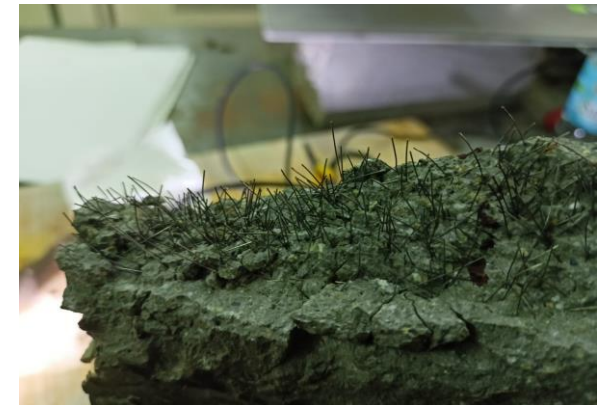
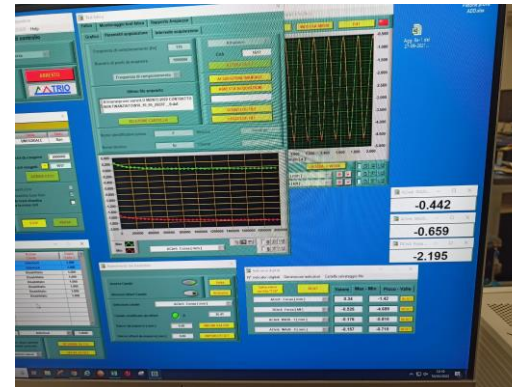
- Position: Master Researcher
- Discription: Master Thesis Ultra High-Performance Concrete Under Cyclic Loads.
- Tasks:

IX. Constituents: UHPC typically comprises fine aggregates (such as silica sand or quartz flour), cement, silica fume, a low water-to-binder ratio ( $<0.25$ ), high-range water reducers, and steel or synthetic fibers. PubMed Central+1MDPI+1

X. Mechanical Strength: It exhibits compressive strengths exceeding 150 MPa and tensile strengths greater than 5 MPa, significantly surpassing those of conventional concrete. Federal Highway Administration+4PubMed Central+4link.springer.com+4

XI. Durability: The dense microstructure of UHPC results in low permeability, enhancing resistance to environmental factors such as freeze-thaw cycles, chloride ingress, and chemical

## **XII. MY SPECIAL PHOTOS**



Thanks



UNIVERSITY OF BAHRI

COLLEGE OF ENGINEERING & ARCHITECTURE

DEPARTMENT OF CIVIL ENGINEERING

31 December 2018

### TO WHOM IT MAY CONCERN

It is my pleasure to recommend one of my students, Mr. **Mohammed Azhari Ahmed Zakria** for admission in your graduate program.

I had encountered **Mr. Mohammed** in his fourth and fifth classes of his civil-engineering- honor program –University of Bahri-Sudan. Through my interaction with **Mr. Mohammed**, he is intelligent and scored excellent academic performance in courses related with traffic and transportation engineering. Also he maintained credit records in subjects such as highway and airport design, soil mechanics, foundation engineering and elective (problematic soils). He used to do his assignments satisfactorily within the due time. His academic achievement duly reflects his hardworking and devotion to study. He is very innovative and generally comes up with intelligent questions that depict his understanding of the subjects and quest for knowledge.

**Mr. Mohammed** showed himself as a responsible, motivated, hard-working teaching assistant at Civil Engineering Department- University of Bahri.

In view of his excellent track record, his zeal for learning and his commitment to his goal, I sincerely believe that he is a right choice for your master program and deserves the position to enable him to pursue higher studies. So I strongly recommend **Mr. Mohammed** for admission in your institution and also wish him best future.

Sincerely yours,

Dr. Eisa Abdalla Mohamed Ahmed  
A. Professor at Department of Civil Engineering- University of Bahri - Sudan  
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Email: [eiabdalla@yahoo.co.uk](mailto:eiabdalla@yahoo.co.uk)





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31 December 2018

**To whom it may concern**

In my capacity as A.professor in Civil Engineering Department at College of Engineering and Architecture – University of bahri – Sudan, I came to know **Mr. Mohammed Azhari Ahmed Zakria** very well, he is one of the brightest and most promising student ,when approached to write a recommendation letter to strengthen his application for the master of Civil program I accepted without hesitation, I have the pleasure of teaching **Mr.Mohammed** during his undergraduate studies where he attended many of my taught courses during his last three years in University of Bahri he is one of the most responsible and ambitions student.

Within the period of his studies, he has shown himself as a disciplined, reliable and conscientious student with the comprehensive knowledge in different areas and environmental engineering, as well as actively participated in the extra – curriculum social activities. His participation is always welcome as he asks questions that are well thought out, In the courses of study and at the defense of his graduation work, **Mr.Mohammed** Showed himself as a responsible, motivated, hard – working student with excellent analytical skills, capable of conduction academic research in accordance with the requirements of a graduate studies. Also as **Teacher Assistant (part timer)** at Civil Engineering department, **Mr.Mohammed** demonstrated his deep interest and learning skills in planning structures.

His steady academic background, outstanding personal qualities and practical experience allow him to contribute to the chosen programme sharing his expertise and original approach to different issues.

In sum **Mr.Mohammed** is a very gifted student and a true credit to your programme. I recommend him, without reservation, for application to the Master of Science in your institution.

**Dr. Ibrahim Omer Haroun**  
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College of Engineering and Architecture.  
University of Bahri.  
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