

SHIBLI AFAQ

Architect | Urban Data Researcher | M.Sc. Smart & Sustainable Cities

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SUMMARY

Architect and Urban Data Researcher with over four years of experience delivering commercial, educational, and residential projects. Proven track record in design development, multidisciplinary coordination, and municipal permitting. Recently enhanced this foundation with an M.Sc. in Smart and Sustainable Cities (4.0 GPA), expanding analytical capabilities to the urban scale. Adept at geospatial workflows and microclimate modelling to design walkable, thermally comfortable, sustainable urban spaces that balance architectural vision with rigorous environmental performance.

Available immediately, no notice period. Indian national; requires employment visa sponsorship.

EDUCATION

King Fahd University of Petroleum and Minerals

Master of Science in Smart and Sustainable Cities

Specialization in Smart City, Urban Informatics & Sustainability

GPA: 4.0/4.0

Thesis: Smart Digital Twin Framework for Urban Heat Island Monitoring, Forecasting, and Mitigation

Coursework (all A+): Urban Informatics; Big Data Analytics; Quantitative Methods; Sustainable Neighbourhood and Urbanism; Intelligent Transportation Systems; Fundamentals of Smart and Sustainable Cities; Environmental Economics and Sustainability; Sustainable Infrastructure and Renewable Energy

Birla Institute of Technology (BIT), Mesra

Bachelor of Architecture (B.Arch.), five-year professional degree

CGPA: 7.61/10.0 (First Class with Distinction)

Awards: 1st Place Interior Design Trophy (Zonasa 2019); 2nd Place Café Design (NASA 2017); Shortlisted Main Design Trophy (Zonasa 2018); National Top 66: Embark Competition (ANDC 2019)

PROFESSIONAL EXPERIENCE

Metarch Studios

Project Architect

- Delivered complete design packages for a **\$720K portfolio** of commercial (restaurants), educational (schools), and residential development projects, taking each from concept and schematic design through detailed design documentation, authority submittals, and municipal approval; achieved **100% on-time and on-budget** delivery
- Analysed site conditions at the start of each project, applying local regulations and design guidelines, plot constraints, setbacks, access, and external works, and resolved site planning and pedestrian and vehicular access alongside the building package, coordinated with landscape designers
- Coordinated all disciplines and sub-consultants, structural and services engineers, landscape designers, and contractors, across 4 simultaneous project types, resolving their technical inputs into a single coordinated set; reduced construction change orders by **8%**
- Ran design development and design review meetings with clients and municipal authorities, presenting design proposals, 3D models, and visualisations, and refining the proposals based on their feedback; improved client satisfaction by **20%** above baseline through Building Information Modelling (BIM) workflows and advanced 3D visualization
- Established design guidelines, drawing standards, and documentation templates that organised project material into a repeatable design process, raising team drawing delivery speed by **15%** and improving consistency across all deliverables

Medicfibers

Graphic Designer

- Created strategic pitch decks, presentations, and brand materials supporting major investment funding campaigns
- Developed social media strategy increasing brand visibility by **40%** and audience engagement threefold

Jaiswal and Associates

Architectural Intern

- Produced 3D models, renders, floor plans, sections, & elevations for 10+ diverse projects (residences, group housing, factories) using industry-standard software
- Designed and drafted a commercial kiosk for MS Dhoni's organic farm business, translating brand guidelines into executable architectural documentation

Metarch Studios & Chadda and Associates

Architectural Intern

- Produced computer-aided design (CAD) working drawings, 3D models and renderings for interior and exterior projects; contributed floor plans, sections, elevations and construction drawings for private clients and government agencies

PROJECTS

- GIS and Remote Sensing-Based Assessment of Urban Heat Island in Dammam Metropolitan Area** *Jan - May 2026*
Term Paper, CRP 583: Urban Informatics, KFUPM
Five-step GIS and remote sensing workflow across **12,954 grid cells (3,238 sq km)**; Landsat 8/9 LST for 2020, 2023 and 2025; NDBI the dominant predictor of surface temperature ($r = 0.715$, R-squared 0.511); dual-threshold mapping isolated a **57.3 sq km** urgent intervention zone; composite Heat Vulnerability Index hotspot **4.18 times** larger than an LST-only analysis

- **Smart Digital Twin Framework for Urban Heat Island Monitoring, Forecasting, and Mitigation** Aug 2025 - Aug 2026
M.Sc. Thesis, KFUPM | Riyadh, Jeddah, Dammam, Makkah, NEOM
Platform: full-stack geospatial application – FastAPI and PostgreSQL backend serving a React and deck.gl WebGL map client, containerised with Docker Compose
Pipeline: near-real-time ingestion over 8 years of daily history across five cities; processing latency under 2 min, end-to-end 3-5 hours
Forecasting: 48-hour Prophet LST forecasting at **2.3-3.2 degrees Celsius RMSE** (4.6-6.3% MAPE), modelling dust storms, sea breeze and pilgrimage load
Intervention simulator: applies greening, cool pavement, water or shade to any block, returning temperature drop, cooling spread, residents and elderly protected, and local-price cost, single measures 0.2-3.0 degrees Celsius, combined block schemes averaging **5.7** (range 4.2-6.5) across the 28-block Al Khobar corridor
Vulnerability: Heat Vulnerability Index places **1.37 million residents** in the Very High class
- **A Systematic Review of Soundscape and Thermal Comfort Interactions in Hot-Arid Environments** 2024 - 2026
Peer-reviewed review published in *Discover Cities (Springer Nature)* | with Y. A. Adenle and M. A. Basheer
Screened **1,011 records** under PRISMA 2020 and synthesised the 22 eligible studies (2005-2025) on how the acoustic environment shapes outdoor thermal comfort in hot-arid public space; produced the Integrated Thermo-Acoustic Planning (ITAP) Framework and guidelines for walkable, thermally comfortable public space under Vision 2030
- **Smart City Big Data Projects: IoT Pipeline & Multi-City UHI Analysis** Aug - Dec 2025
Course Projects, ICS 574: Big Data Analysis, KFUPM
IoT pipeline: five-layer MQTT/Kafka/Spark Structured Streaming architecture at **sub-2-second** end-to-end latency, 300+ readings/minute from 10 simulated sensors, with a documented scaling path to 10,000
Analytics and deployment: live linear-regression forecasting with runtime R-squared and IQR anomaly detection, served through Streamlit and Docker
Multi-city surface temperature: **25,905** MODIS/Terra measurements across Dammam, Dublin and Reykjavik; inverse latitude-temperature relationship ($r = -0.995$, R-squared 0.990), 9.1 degrees Celsius per 10 degrees of latitude
- **Twin Tower Complex – Mixed-Use High-Rise Development** Jan 2020 - Jun 2021
B.Arch. Thesis, BIT Mesra
69-storey mixed-use development integrating residential, commercial and public programs with the surrounding street network; earthquake-resilient structure, passive energy systems, full BIM model, complete municipal documentation package

PUBLICATIONS

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| A Systematic Review of Soundscape and Thermal Comfort Interactions in Hot-Arid Environments | 2026 |
| <i>Discover Cities</i> , Springer Nature Vol. 3, Issue 1, Art. 123 Open Access | |
| With Y. A. Adenle and M. A. Basheer doi.org/10.1007/s44327-026-00314-z | |
| GIS and Remote Sensing-Based Assessment of Urban Heat Island in Dammam Metropolitan Area | 2026 |
| <i>Status: Manuscript in Preparation</i> | |
| ITS-Based Congestion Management for Event Corridors in Arid Cities | 2026 |
| <i>Status: Manuscript in Preparation</i> Co-authors: H. Alnasser, H. Alghamdi | |

CERTIFICATIONS & PROFESSIONAL MEMBERSHIP

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| Licensed Architect, Council of Architecture, India (CA/2021/136485) | Jun 2021 |
| Associate Member, Indian Institute of Architects (IIA), Jharkhand Chapter | Sept 2024 |

LEADERSHIP & ACTIVITIES

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| Student Society of Architecture, BIT Mesra | Ranchi, India |
| <i>Vice President (2019 - 2020) & General Secretary (2018 - 2019)</i> | 2018 - 2020 |
| Orchestrated events for a 300+ member organization; led Vajra Pavilion 2018 (30+ volunteers, on-budget delivery); organised workshops to facilitate skill development for junior students | |
| National Service Scheme, BIT Mesra | Ranchi, India |
| <i>Executive Member</i> | 2016 - 2018 |
| Monitored the welfare of 10 villages; organised educational initiatives, blood drives, and medical camps | |

SKILLS

- Design Software:** Revit, AutoCAD, SketchUp, Rhino, Photoshop, InDesign
- Architectural Workflows:** Building Information Modeling (BIM), 3D Modeling and Visualisation, Concept, Schematic and Detailed Design, Construction Documentation, Design Reports, Submittals and Authority Approvals
- Site & Urban Analysis:** Site Analysis, Urban Form Analysis, Land Use Analysis, Heat Vulnerability Mapping, Outdoor Thermal Comfort, Shading and Microclimate Analysis, Walkability and Pedestrian Access, Green Infrastructure, Passive Design
- Geospatial & Programming:** ArcGIS Pro, Geographic Information Systems (GIS), Google Earth Engine (GEE), Remote Sensing (Landsat, MODIS, Sentinel-2), NDVI/NDBI Analysis, Spatial Statistics (Getis-Ord Gi*), Python, PRISMA 2020 Systematic Review
- Languages:** English & Hindi (Professional Working); Urdu (Native)