Alp Kaan Erkul

Architect | BIM, digital construction and research

Ankara, Türkiye · benkaanerkul@gmail.com · +90 539 560 08 89 · alpkaanerkul.github.io · linkedin.com/in/alpkaanerkul/

RESEARCH PROFILE

Architect with an MSc in Informatics in Construction Management from Istanbul Technical University and professional experience in site execution, technical office work and project coordination at YDA Group since 2023. My research interests connect BIM-enabled digital twins, construction safety and data-informed decision support with the realities of project delivery. I have conducted a systematic review of extended reality in cultural heritage project management and am developing foundational Python and sensor-fusion knowledge through an AI-guided learning prototype.

RESEARCH INTERESTS

BIM and digital twins in construction management · predictive safety and risk management · wearable sensing and movement analysis · AI-assisted decision support · digital transformation in the built environment

EDUCATION

MSc, Informatics in Construction Management — Istanbul Technical University | 2024–2025
GPA: 3.78/4.00. Selected coursework: BIM and Digital Project Delivery; Construction Planning and Scheduling; Business Process Management; Construction Contracts and Delivery Systems; Sustainable Construction Management.

Bachelor of Architecture — Çankaya University | 2018–2023

RESEARCH EXPERIENCE AND PRESENTATION

Erkul, A. K., & İlter, A. T. (2026). “Mapping XR Applications in Cultural Heritage Projects: A PMBOK-Based Meta-Classification Review.” Presented at the 2nd Global Scholarship for Sustainable Built Environment Research Conference (SURE-Built 2026), University of Johannesburg, 3–4 September 2026.

- Conducted a PRISMA-guided review of 127 studies published between 2015 and 2025; classified XR applications by PMBOK lifecycle phases and knowledge areas.
- Identified gaps in cost management, project initiation and closing, lifecycle integration and links with HBIM. Methods included structured coding, descriptive synthesis and research-gap identification.

PRELIMINARY RESEARCH EXPLORATION

Predictive construction safety — Python learning prototype | 2026

- Used AI-guided learning and programming exercises to study motion estimation, measurement uncertainty and Kalman filtering at a foundational level.
- Built a preliminary simulation with synthetic worker trajectories to compare position-only and IMU-assisted motion estimation; explored warning lead time, positioning error and false alarms in a simplified hazard setting.

Tools: Python, NumPy and Matplotlib (foundational level).

PROFESSIONAL EXPERIENCE

Technical Assistant to the CEO — YDA Group, Ankara | Aug 2025–present

- Structure multidisciplinary project information, reports and follow-up workflows for executive decision making across multiple projects.
- Review technical and contractual terms in international machinery and equipment supply agreements; coordinate risk analysis and revision recommendations with legal, engineering and supplier teams.

Project Coordination Specialist / Technical Office Architect — YDA Group | Jun 2024–Aug 2025

- Supported earthquake-reconstruction village-housing projects in Adıyaman and Gaziantep involving approximately 1,596 housing units.
- Worked on scheduling, cost forecasting, subcontractor progress payments, material approvals, document control and coordination between site teams and headquarters; used Primavera P6, MS Project and Excel.

Site and Technical Office Architect — YDA Group | Sep 2023–Jun 2024

- Supported architectural site execution, quantity and payment documentation, material coordination and handover, including temporary acceptance and closeout of the Vaccine Centre project.

SELECTED ANALYTICAL AND DIGITAL PROJECTS

Agile project-management software selection — MSc coursework | 2024–2025
Compared six platforms using decision matrices, SAW, TOPSIS, ranking, group decision and sensitivity analysis.

Tower crane investment and replacement analysis — MSc coursework | 2024–2025
Applied payback, annual-equivalent, economic service-life and defender–challenger analyses under defined scenarios.

MaterialFlow — Excel/VBA workflow prototype | 2025
Developed a traceable procurement and tracking workflow covering requests, approvals, suppliers and document generation; technically tested before organisational rollout.

OfficeQueue / Valora — digital workflow concepts and prototypes | 2025–2026
Explored scheduling constraints and task prioritisation in a React prototype, and integrated construction-management records for payments, quantities and suppliers.

METHODS AND TECHNICAL SKILLS

Research: systematic literature review, structured classification, comparative analysis, multi-criteria decision methods, sensitivity analysis and academic writing.

Construction and BIM: site and technical-office coordination, project scheduling, quantity and cost tracking, Revit, Navisworks, AutoCAD, Primavera P6 and MS Project.

Digital tools: Excel/VBA, Power BI, React-based prototyping; Python, NumPy and Matplotlib at a foundational learning level.

PROFESSIONAL DEVELOPMENT

Construction Project Management (2023); Project Scheduling (2024); Construction Cost Estimating and Cost Control (2024) — Columbia University, Coursera.

LANGUAGES

Turkish: native · English: professional working proficiency