

ALFRED C. BOWLES

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Nationalities: United Kingdom | Lebanon
D.O.B: 19 / 11 / 1995

EXPERIENCE

Oct 23' - Present BLACK ENGINEERING

Project & Design Manager

Riyadh, Saudi Arabia
Turin, Italy

- **Project Management:** Led the full project life-cycle for the refurbishment and construction of the nation's largest opera house, delivering it within an accelerated 7-month timeline by implementing dynamic planning and tracking systems.
- **Stakeholder Collaboration:** Fostered strong partnerships with architects, engineers, contractors, suppliers, and consultants, ensuring seamless communication and a unified approach to meet project goals.
- **Design and Construction Expertise:** Leveraged specialized skills in design, BIM, timber and steel fabrication, and construction to proactively identify and resolve potential issues while defining clear design requirements and deliverables.
- **Strategic Procurement and Negotiation:** Managed and negotiated contracts with suppliers, securing timely and cost-effective procurement of materials and services without compromising quality.
- **On-Site Oversight and Problem Solving:** Directed contractor and supplier activities, resolving design, structural, and fit-out challenges on-site to maintain progress, uphold quality, and align all stakeholders toward project success.

Oct 22' - Oct 23' XYLOTEK - ADVANCED TIMBER STRUCTURES

Computational Designer

London, UK
Bristol, UK

- **Computational Design:** Collaborated with architects, engineers, and designers to lead, design, and coordinate complex timber structure projects, delivering innovative and functional solutions.
- **Data-Driven Workflows:** Developed advanced workflows for design, connection detailing, digital fabrication, and installation, specializing in large timber and steel structures such as pavilions, staircases, walkways, and CLT frameworks.
- **Parametric Design Automation:** Leveraged Grasshopper and Python to automate processes, enabling efficient project delivery with reduced turnaround times.
- **Fabrication and Assembly Oversight:** Directed on-site fabrication and assembly, producing parametric installation sequence drawings to streamline construction workflows and ensure precision.

July 22' - Aug 22' LA MÁQUINA - NOUMENA

Computational Designer - 3D Printing Assistant

Barcelona, Spain

- **Advanced 3D Printing Development:** Created custom Grasshopper scripts to design printing strategies for large-scale PLA and bio-polymer 3D prints, utilizing WASP Delta FDM printers as well as 6-axis robotic manipulators.
- **Technical Expertise and Problem Solving:** Contributed to printing, debugging, and post-processing, gaining hands-on experience in non-planar 3D printing, color gradients, and mechanical connection techniques.

Mar 18' - Jul 21'

MAKR SHAKR - ROBOTIC BARTENDERS

Project Manager - Design Engineer

Turin, Italy (Base)
Germany
Spain
France
USA
China
Japan

- **Robotic Bar Installations Project Manager:** Spearheaded all new Robotic Bar installations including those aboard Royal Caribbean's largest cruise ships in the world.
- **Cross-Functional Coordination:** Collaborated with subcontractors such as Kuka Robotics, design firms, automation specialists, and clients to plan and execute seamless installations.
- **On-Site Leadership:** Oversaw all aspects of on-site operations, including team coordination, logistics, contractor and client relations, and rapid problem-solving to ensure project success.
- **Cost Management and Profitability:** Managed project cost controls, achieving an average profit margin of 24% per project through efficient planning and execution.
- **Technical Design and Fabrication:** Utilized AutoCAD, Rhino, and SolidWorks to design and fabricate key mechanical components, such as the robotic structural base and pneumatic end-effector.
- **Contract Negotiation, Scheduling, and After-Sales Management:** Contributed to contract negotiations and expertly managed project timelines for all installations, ensuring high-quality, on-time delivery. Secured, negotiated, and managed maintenance and sales contracts for robotic bars, valued at over €2 million, fostering strong client relationships and supporting sustained growth.
- **Global Client Relations and Operations Coordination:** Coordinated scheduling, logistics, and repair processes for the Bionic Bar, working closely with local contractors and global clients to ensure seamless service and support. Traveled extensively to locations such as China, Japan, New York, New Zealand, Germany, and Spain, fostering strong client relationships and overseeing technician activities.

Jan 20' - Jul 21'

CARLO RATTI ASSOCIATI

Mechanical Designer - R&D Engineer

Turin, Italy (Base)
Parma, Italy

- **I.C.U. Container Design, Construction, and BIM Modeling:** Played a key role in the design, hands-on construction, material supply, and deployment of I.C.U. container units in under 4 weeks for a pop-up Covid-19 hospital in Turin, Italy. Responsibilities included metal fabrication, HVAC, electrical systems, medical gas piping, machinery installation, and medical equipment deployment. Additionally, created a complete BIM model in Revit and produced the 2D As-built drawing sets.
- **Project Management, Coordination & Technical Design:** Designed and managed the fabrication, coordination and installation of four bespoke, co-axially mechanized oak doors for a villa in Parma, Italy, collaborating with contractors, fabricators, engineers, architects, and the client to deliver a high-quality product.
- **Robotic Bar Design & Innovation:** Designed and built several components, including cocktail shaker end-effectors, fruit slicers, hydraulic and pneumatic systems, and a client-facing tablet totem. Additionally, developed an upgraded Robotic Bar concept for a large casino chain in the U.S., focusing on efficiency and fast drink delivery to enhance service speed and customer satisfaction.

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EDUCATION

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| Oct 21' - Jul 22' <i>Barcelona, Spain</i> | Institute for Advanced Architecture of Catalonia (IAAC) <ul style="list-style-type: none">Acquired invaluable knowledge pertaining to the world of robotic fabrication, robotic operation, parametric design, digital sensing, mixed reality, computer vision, data management and rapid prototyping applied to the AEC sector.Used several digital and physical tools to design, create, manufacture and present projects in short timelines. | Master in Robotics & Advanced Construction |
| Sep 12' - Dec 17' <i>Beirut, Lebanon</i> | American University of Beirut (AUB) | Bachelor of Engineering (BEng.) in Mechanical Engineering |
| Sep 98' - Jun 12' <i>Beirut, Lebanon</i> | Adma International School | Scientific High-school Diploma (Honor's List 2009-2012) |

SKILLS

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| DESIGN & MODELING | Rhino 3D Grasshopper Solidworks AutoCAD Revit |
| SOFTWARE & HARDWARE: | Python C++ C# Computer Vision (OpenCV) Photogrammetry OpenFrameworks Illustrator Arduino Raspberry Pi ROS KUKAprc |
| FABRICATION: | 3D Printing CNC Machining RhinoCAM MIG, TIG & Electrode Welding Proficient with manual tools |

LANGUAGES

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| ENGLISH Mother Tongue | ARABIC Mother Tongue | ITALIAN FLUENT | FRENCH INTERMEDIATE | SPANISH BEGINNER |
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HONORS & AWARDS

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| 2020 | C.U.R.A. - Connected Unit for Respiratory Ailments Team Member WINNER : ARCHITIZER A+ Architecture + For Good WINNER: FAST COMPANY Innovation by Design + Social Good WINNER: P4G State-of-the-Art Partnership Awards + Sustainable Development |
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EXTRACURRICULARS, SPORTS & LEADERSHIP

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| 2012 - 2017 | National & Collegiate Rugby <ul style="list-style-type: none">Became the captain of the AUB Varsity Rugby League program, gaining skills in leadership and teamwork.Represented Lebanon in International fixtures against Serbia and Italy.Awarded the MVP award for leading the team to a national victory for the first time in 13 years. |
| 2013 - 2017 | Private Tutoring in Mathematics <ul style="list-style-type: none">Tutored A.U.B students in mathematics courses ranging from Calculus to Higher-order differential equations classes. Other Activities <ul style="list-style-type: none">Model United Nations, Skiing, Football, Rock-climbing and Volleyball. |

REFERENCES

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| Vittorio Cravino Senior Project Manager Black Engineering - Riyadh (KSA) +39.334.318.9314 (cell) vittorio.cravino@blackengineering.it | Martin Self Design Director Xylotek - Bristol (UK) +44.7917.663065 (cell) martin@xylotek.co.uk | Emanuele Rossetti PhD. CEO Carlo Ratti Associati - Turin (IT) +39.334.112.5640 (cell) +39.011.1969.4270 (office) emanuele@carloratti.com |
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