MOATAZ ABDELAAL

STUTTGART, GERMANY • MOTTAZABDELFATTAH@GMAIL.COM • +49 1525 2168 331
PORTFOLIO • LINKEDIN • GOOGLE SCHOLAR
Languages: English (C1), German (B2), Arabic (native)

SUMMARY

Researcher and Data Visualization Specialist with a background in user-centered design, data analysis, and interactive tools. Experienced in interdisciplinary collaboration, user research, and developing decision-support systems through visualization and analytics.

SKILLS

- User Research & Evaluation: Usability testing, interviews, surveys, workshops, mixed-method analysis
- Data Analysis: R, Python (Jupyter), Excel; EDA, descriptive & inferential statistics
- Visualization: D3.js, Chart.js, SciChart, Power BI
- Frameworks & Libraries: .NET, WPF, Angular, React
- Programming Languages: C#, Java, PHP, HTML, CSS, JavaScript
- Databases: SQL, MySQL, SQLite
- Collaboration & Teaching: interdisciplinary teamwork, peer-reviewing, manuscript writing, tutoring

PROFESSIONAL EXPERIENCE

Freelance Researcher & Visualization Specialist | Remote   2025-Present
- Working independently on projects involving data analysis, visualization, and user research
- Stack: React, Chart.js, Power BI

Data Visualization Researcher | Visualization Research Center (VISUS), Germany   2018-2024
- Developed novel techniques for network dataset analysis
- Designed and implemented visual interfaces for architectural and engineering decision-making
- Requirements analysis, user research, evaluation and usability testing
- Mentored and tutored students
- Stack: Varied per project (see examples below)

Visiting Researcher | Visualization Design Lab, University of Utah, USA   2022-2022
- Prototyped novel techniques for detecting patterns in genealogical and geographic datasets
- Stack: Vue.js, D3.js

NET Web Developer (Part-Time) | STORESERVER, Stuttgart, Germany   2017-2017
- Optimized backend performance implementing multithreading
- Developed new features and fixed bugs
- Stack: .NET, C#, HTML, JavaScript, SQL

Teaching Assistant | Helwan University, Egypt   2011-2015
- Mentored and tutored students
- Implemented an internal LMS using PHP and MySQL

Java Web Developer | Harf, Cairo, Egypt   2011-2012
- Maintained the company's learning platform (Tadarus).
- Stack: Java, Servlets, Spring, SQL

SELECTED PROJECTS

Assessing Visualization Literacy of Domain Experts *(User Research, Evaluation)*
Contributed to a two-part study that assessed data visualization literacy among architects, engineers, and social scientists through a standardized literacy test and semi-structured interviews.

Creativity Workshops *(Participatory Design, Workshop Facilitation)*
Facilitated a creativity workshop with architects to explore their current workflows and identify opportunities for visualization. Used structured activities—including wishful thinking, brainstorming, and visual analogies—to elicit design needs and data-driven tool ideas.

Exploring the Design Space of Fiber Structures *(Tool Development, Scientific Visualization)*
Developed a WPF dashboard app to visualize fiber structures in architecture; used SciChart, OpenGL, and SQLite.

Fitness Landscape Explorer *(Tool Development, Case Study)*
Desktop tool for analyzing high-dimensional design spaces; worked on requirements, development oversight, and a case study.

Qualitative Study with Architects *(User Study, Visualization Evaluation)*
Led a qualitative lab study to evaluate how different visualization techniques and projection methods influence architects' exploration of a design space.

Quantitative Visualization Study *(User Study, Comparative Evaluation)*
Led a quantitative user study comparing network visualization techniques (e.g., bipartite, node-link, matrix), providing empirical evidence to inform the design and selection of network visualization approaches.

Thematic Analysis *(Literature Review, Qualitative Analysis)*
Contributed to a large-scale literature review by thematically coding 127 visualization papers to analyze how scalability is defined and justified. The project highlighted inconsistencies in terminology and the need for shared frameworks across visualization subfields.

Timber Stakeholders Explorer *(Network Visualization, Web Development)*
Single-page web app (D3.js, Leaflet) mapping stakeholder relationships in timber construction; collaborated with domain experts.

Visualization Techniques for Dynamic Networks *(Comparative Visualization, Web Development)*
Built an Angular/Node.js app with D3.js to compare four network visualization methods; generated test datasets using R.

EDUCATION

PhD in Computer Science | University of Stuttgart, Germany	Expected 2025
MSc in Computer Science | University of Stuttgart, Germany	2017
BSc in Software Engineering | Helwan University, Egypt	2010