

DR.-ING. RAGAAD ALTARAWNEH

Performance Visualization Architect | Senior AI Systems Scientist Fremont, CA |
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PROFESSIONAL SUMMARY

Senior Systems Architect and Data Storyteller with 10+ years of experience transforming complex **AI system performance data** into actionable visual insights. Expert in building high-performance visualization platforms that reveal bottlenecks in **large-scale GPU/CPU clusters**, distributed ML workloads, and SW/HW interfaces. Proven track record at **Intel Labs** of architecting visual data management systems that optimize workload efficiency by **10x**. Combines deep engineering insight (C++/Python) with design thinking to drive innovation in technical UI/UX and automated analytics pipelines.

CORE EXPERTISE

- **Data Storytelling & Visualization:** Interactive Dashboards, High-Dimensional Data Mapping, Visual Analytics for Deep Learning.
- **Specialized Data Visualization:** PhD-level expertise in Interactive Visual Support, High-Dimensional Data Mapping, and Perception-based UI/UX.
- **Performance Engineering:** CPU Utilization Profiling, Distributed System Bottleneck Analysis, Low-Latency Inference Optimization.
- **Full-Stack Development:** Python (Data Libraries), C++, SQL, Bash Scripting, Docker, Kafka, AWS.
- **System Architecture:** Cloud-Scale Server Frameworks, Automated Analytics Pipelines, API Gateway Design.

PROFESSIONAL EXPERIENCE

Sedrah AI Solutions | Founder & CEO | 2024 – Present

- **AI Performance Visualization:** Architected a "Voice-to-Verse" multimodal exploration engine, designing custom visual interfaces to map complex semantic audio search patterns.
- **Data Storytelling:** Built interactive R&D pipelines for Multimodal AI Agents, translating high-dimensional profiling data into intuitive dashboards for scholarly and technical users.

Intel Labs | Systems Research Scientist / Architect | 2017 – 2024

- **Visual System Performance:** Led the design of **VDMS**, a distributed Visual Data Management System; transformed complex storage-compute interaction data into optimization strategies that achieved **10x efficiency gains**.
- **GPU Cluster Analytics:** Collaborated with **Stanford and CMU** to deploy **Scanner** and **SAF**, building automated pipelines to visualize system-level performance patterns in cloud-scale video analytics.

- **Visual Tool Development:** Engineered polished UI/UX frameworks for monitoring multimodal AI pipelines, allowing researchers to identify real-time inference bottlenecks across edge-to-cloud infrastructure.
- **Data-Driven Decision Making:** Authored 30+ peer-reviewed papers at top-tier venues (IEEE, USENIX), distilling sophisticated numerical data into clear narratives that influenced the global hardware roadmap.

San Francisco State University | Lecturer & Research Supervisor | 2017 – 2024

- **Visualization Leadership:** Developed and taught advanced curricula in **Data Visualization and AI Ethics**, focusing on how to interpret complex profiling data for diverse technical audiences.
- **Mentorship:** Directed graduate theses on **LLM integration and ML analytics**, establishing visualization guidelines to reveal system patterns in large-scale language models.

Mutah University | Assistant Professor | 2015 – 2021

- **Architectural Visualization:** Taught Computer Graphics and AI, emphasizing the visual storytelling of how software decisions impact low-level hardware performance.

SELECTED TECHNICAL PROJECTS

- **Scanner (Intel Labs + Stanford):** Built a large-scale video analytics framework focused on high-throughput processing and visual performance tracking.
- **SAF (Intel Labs + CMU):** Architected an edge-cloud streaming system with a focus on visualizing low-latency inference bottlenecks in distributed environments.

EDUCATION

- **Ph.D. in Computer Engineering** | RPTU Kaiserslautern-Landau, Germany
 - *Thesis: Interactive Visual Support for Understanding Embedded Systems* (Directly applies to system-level performance storytelling).
- **M.S. in Computer Science** | Jordan University
- **B.S. in Computer Science** | Mutah University