

ZAKIA DJERRAH ARIB

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PROFILE SUMMARY

Biology Engineer and Data Science Intern with experience in laboratory operations, biotechnology, quality assurance, and laboratory automation. Skilled in Python, SQL, Tableau, Power BI, data preparation, exploratory analysis, customer segmentation, and machine learning modeling, with hands-on experience integrating laboratory equipment and managing data migration. Combines practical data science training with strong microbiology and laboratory process expertise.

AREAS OF EXPERTISE

- **Core Competencies:** Analytical equipment programming (Tecan Fluent Control, Lab Pro, SoftMax), Software validation, installation, quality assurance, and compliance oversight, Lab operations management, instrument calibration & preventive maintenance, Programming with Python, SQL, C#, HTML for lab automation & AI integration, Strong background in microbiology, antibiotic testing, and molecular biology methods, Proficiency with laboratory and business software (ELN, LIMS, Smartsheet, SharePoint, Tableau, Power BI, MS Office)
- **Lab Software:** ELN, OpenLab, BIOVIA CISPRO, LIMS, Smartsheet, SharePoint, Tableau, Power BI
- **Programming:** Python, SQL, C#, HTML
- **Analytical Equipment:** TECAN Fluent, Plate Readers, Flow Cytometry, Vitek, Incucyte, Biacore, Typhoon Imager, Thermocyclers, Automated Pipettors
- **AI & Data Tools:** LangChain, Pinecone, AWS, RAG-powered AI agents, LLM integration

PROFESSIONAL EXPERIENCE

- | | |
|--|--------------------|
| | Present |
| <i>Data science for professionals with learning saint certificate (currently attending)</i> | |
| SaiketSystems | 2025 - 2026 |
| <i>Data science internship</i> | |
| <ul style="list-style-type: none">• Conducted customer churn analysis and prediction using Python, including data preparation, exploratory data analysis, customer segmentation, and machine learning modeling. | |
| Stanford University – Code in Place Program (Remote) | 2025 - 2025 |
| <i>Volunteer Section Leader (Python & AI Concepts)</i> | <i>Remote</i> |
| <ul style="list-style-type: none">• Taught Python to 12 students, including reviewing programming concepts and solving problems.• Completed training in AI and Large Language Models (LLMs).• Collaborated on an AI project to annotate feedback data, fine-tune, and train a small LLM ‘Argilla’ to grade assignments and provide feedback. | |
| Johnson & Johnson / Pioneer Data Systems | 2022 - 2023 |
| <i>Lab Operations Lead / Scientist II (Chemistry)</i> | <i>Malvern, PA</i> |
| <ul style="list-style-type: none">• Led lab operations in Bioassay Method Development for Biotherapeutics Development & Supply.• Established lab operations support department, resolving technical and compliance issues.• Managed equipment onboarding/validation/ decommission and life cycle compliance (e.g., flow cytometers, incubators, balances, plate readers, Biacore T200, TECAN, thermocyclers) across department including IT department, compliance department and scientists.• Oversea and troubleshoot issues related to equipment while working with IT department as needed, to install new software, integration and validation of new ai equipment and analytical lab equipment.• Manage and oversea data migration and work with IT to set up automated migration of data from lab equipment to data base platforms such as open lab.• Coordinated services with vendors (Thermo Fisher, Bio-Rad, Millipore, QIAGEN, Sartorius, Waters).• Authored and reviewed SOPs, work instructions, CAPAs, PSRs, and equipment documentation.• Implemented Biovia ELN logbooks, procurement tool tracking, and Smartsheet workflows.• Supported environmental monitoring of GMP aseptic chambers.• Recognized for improving workflows, creating SharePoint communication site, and saving costs by introducing in-house equipment servicing. | |
| Brookside Clinical Laboratory | 2020 - 2022 |
| <i>Technical Consultant / Microbiology Supervisor</i> | <i>PA</i> |

- Supervised lab operations, equipment installation/validation, and method implementation.
- Oversaw proficiency testing, CLIA compliance, and regulatory inspections.
- Managed antibiotic resistance testing (ESBL, MRSA, VRE, VRSA), molecular and virology testing (Flu, RSV, C-Diff, Strep).
- Directed microbiology and molecular workflows on MicroScan, REVOGENE, PCR platforms.
- Prepared laboratory for inspections and ensured timely reporting of critical results.

Pennsylvania Department of Health – Bureau of Laboratories

2016 - 2018

Microbiologist I

- Performed microbiology, cell culture, and ELISA testing for Zika virus detection in BSL-2 environment.
- Conducted bacterial identification using Vitek and culture techniques.
- Installed and implemented automated media dispenser, improving efficiency.
- Reviewed medical records and ensured accuracy in test results and regulatory compliance.
- Authored SOPs and trained colleagues on new instruments.

GINI Glace Ice Cream Factory

2020 - 2006

Biology Engineer (QC)

Algeria

- Conducted QC inspections of products and instruments.
- Supervised staff schedules, enforced GMP/ISO standards, and reported compliance issues.

2018 - 2020

Maternity Leave

- Focused on family while pursuing online courses in CGMP and Python programming.
- Built transferable skills in time management, adaptability, and continuous learning.

EDUCATION

Temple University

2024

Post-Master's Certificate, Quality Assurance & Regulatory Affairs (QARA)

Philadelphia, PA

University of Tizi-Ouzou (Mouloud Mammeri)

Master of Science, Biology Engineer

Algeria

University of Tizi-Ouzou (Mouloud Mammeri)

Bachelor of Science, Biology

Algeria

CERTIFICATIONS

- QARA certificate Coursework: Temple University Regulatory sciences managing guidelines to quality; Pharmaceutical biotechnology; Pharmaceutical analysis; Validation of Facilities, Utilities and Equipment; Biologics CMC. Dec 2024.
- Power BI Certificate: Microsoft, Jun 2025
- Python Programming Certificate: Stanford University, Jun 2024
- Section Leader Certificate (Teaching Python): Stanford University, Jun 2025 (in progress)
- CGMP Certificate: Biopharma Institute, NJ

TECHNICAL SKILLS

*Lab Software: ELN, OpenLab, BIOVIA CISPRO, LIMS, Smartsheet, SharePoint, Tableau, Power BI

*Programming: Python, SQL, C#, HTML

*Analytical Equipment: TECAN Fluent, Plate Readers, Flow Cytometry, Vitek, Incucyte, Biacore, Typhoon Imager, Thermocyclers, Automated Pipettors

*AI & Data Tools: LangChain, Pinecone, AWS, RAG-powered AI agents, LLM integration

PROJECTS & RESEARCH

AI Agent Development

- Built a Retrieval-Augmented Generation (RAG) AI agent to retrieve relevant data from curated life science libraries and databases.
- Integrated data cleaning, embedding generation, and retrieval pipelines using Pinecone and AWS.
- Designed the agent to provide reliable and explainable responses for life science applications.