

RANA SALEM

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Experience

Software Developer

Jan 2024-present

Defra (Department for Environment, Food and Rural Affairs)

- UK Civil Service contract as a Node.js developer, working within Defra's Farming and Countryside Programme on a multidisciplinary team.
- Contributing to the development of a large-scale online portal improving the digital user experience of British farmers, supporting their essential and widespread work.
- Key role in migrating the *Find farm and land payment data* service from a Microsoft Azure based development platform to an AWS based development platform.

IT Consultant

Apr 2023-present

FDM Group

- Working with one of FDM's public sector clients (Department for Environment, Food and Rural Affairs) as a software developer.
- Awarded the Tech Industry Gold Foundation Credential in Software Development for showcasing proficiency in Java, SQL, Unix, HTML, CSS, Spring Boot, Microservices, REST APIs, React, JavaScript, and Git.

Laboratory Demonstrator

2022-2023

Glasgow Caledonian University

- Excelled as a teaching assistant, mentoring final year undergraduates and a PhD candidate, while demonstrating the use of laboratory equipment for independent research.
- Prioritised safety by enforcing health and safety measures during student's time in the laboratory, fostering a secure and safe learning environment.

Royal Society of Chemistry (RSC) Research Enablement Scholarship

May-Aug 2022

Glasgow Caledonian University & University of Glasgow

- Explored the effects of established textile conservation protocols on historic textile artefacts, with results presented as a poster and flash talk at the Microscience Microscopy Congress (MMC2023) in Manchester, England.
- Utilised advanced tools including AFM, SEM, and fluorescence spectroscopy to generate project data.

Postgraduate Research Intern (PUBLISHED)

Jul-Sep 2021

Glasgow Caledonian University & University of Glasgow

- Examined the effects of textile cleaning on historic cotton textiles using advanced instrumentation: AFM and UV/Vis (Ultraviolet/Visible) spectroscopy.
- The research was published in the peer-reviewed Heritage Science journal.

Royal Microscopical Society (RMS) Summer Studentship (PUBLISHED) Jun-Aug 2020

Glasgow Caledonian University & University of Glasgow

- Analysed textile fibres pre- and post-cleaning with established conservation protocols, with findings published in Infocus Magazine (an RMS publication).
- Featured a poster at the Microscience Microscopy Congress (MM2021) and delivered a local presentation to staff and students from the RMS and partner universities.

Projects

Personal Website | ranasalem.io | github.com/rtsalem/ranasalem.io

- **Summary:** My personal portfolio website where I share my career history, projects, and write for my blog.
- **Role:** Frontend developer and maintainer
- **Tech stack:** TypeScript, Next.js, DaisyUI, Contentlayer, MDX (Markdown + JSX)

Busgres | npmjs.com/package/busgres | github.com/rtsalem/busgres

- **Summary:** Busgres is a Node.js package that will receive a message from Azure Service Bus queues/topics and writes the data into a PostgreSQL database. Configurable with a single client.
- **Role:** Developer and maintainer
- **Tech stack:** JavaScript, Node.js, NPM (Node Package Manager), Azure Service Bus, PostgreSQL

Draft My CV | draftmycv.co.uk | github.com/rtsalem/draft-my-cv

- **Summary:** Online form for generating a professional, ready-to-use CV in Microsoft Word or PDF format from user input. Streamlines job applications.
- **Role:** Full stack developer and maintainer
- **Tech stack:** JavaScript, Node.js, NPM (Node Package Manager), Azure Service Bus, PostgreSQL

Barbie E-commerce Website | github.com/rtsalem/barbie-ecommerce-website

- **Summary:** Barbie themed e-commerce website submitted as a final project after 14 weeks of intensive training as a software developer training at FDM Group.
- **Role:** Backend developer (in a team of 7)
- **Tech stack:** Java, Spring Boot, REST API, JUnit, Mockito, JavaScript, React, HTML, CSS

Take A Bao Shop Menu | github.com/rtsalem/take-a-bao-shop-menu

- **Summary:** Read-only online menu for a pop-up bao bar that also acts as a fundraising platform.
- **Role:** Full stack developer
- **Tech stack:** Java, Spring Boot, REST API, Postman, JavaScript, React, HTML, CSS

Education

Master of Science w/ Merit, Forensic Science 2021-2022

University of Strathclyde, MSc (Glasgow, Scotland)

- **Dissertation:** *Are Established Bleaching Practices in Textile Conservation Damaging Historic Treasures? A Microscopic and Spectroscopic Investigation.*

Bachelor of Science w/ 1st Class Honours, Forensic Investigation 2017-2021

Glasgow Caledonian University, BSc (Hons) (Glasgow, Scotland)

- **Dissertation:** *Analysis of the Effect of Conservation Bleaching Methods on Historic Textiles.*

Erasmus+, Degree Programme in Laboratory Sciences Aug-Dec 2019

Metropolia University of Applied Science (Helsinki, Finland)

- A semester spent as an exchange student in Helsinki, Finland.

Publications & Presentations

PUBLICATIONS

Salem, R.T.A., Thompson, K., Uttamlal, M. *Bleaching cotton in textile conservation: a closer look using atomic force microscopy.* Heritage Science. 2022;10:195. <https://doi.org/10.1186/s40494-022-00830-2>.

Salem, R. *RMS Summer Studentship Report: Microscopic Analysis of Historic Textile Fibres Pre- and Post-Cleaning.* Infocus Magazine: Proceedings of the Royal Microscopical Society. 2020;60:32-35. <https://doi.org/10.22443/rms.inf.1.194>.

PRESENTATIONS

Microscience Microscopy Congress (MMC2023) Jul 2023

Salem, R.T.A., Thompson, K., Uttamlal, M. *Microscopic Analysis of New and Historic Cotton Fibre Cross-Sections.* Microscience Microscopy Congress 2023. Manchester Central Convention Complex (Manchester, England).

Microscience Microscopy Congress (MMC2021) Jul 2021

Salem, R., Uttamlal, M., and Thompson, K. *Microscopic analysis of new and historic cotton textiles pre- and post-bleaching.* Microscience Microscopy Congress 2021. Poster abstract: <https://www.mmc-series.org.uk/mmc2021/abstract/microscopic-analysis-of-new-and-historic-cotton-textiles-pre-and-post-bleaching.html>.

Microscopic Analysis of Historic Textile Fibres Pre- and Post-Cleaning Oct 2020

Royal Microscopical Society Summer Studentship 2020. Glasgow, Scotland.

Professional Development

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| ▪ Microsoft Azure Fundamentals (AZ-900) Certification (Microsoft) | Oct 2023 |
| ▪ Tech Industry Gold Credential: Software Development (TechSkills) | Jul 2023 |

Awards & Achievements

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| ▪ Royal Society of Chemistry Research Enablement Grant (£10,000) | May-Aug 2022 |
| ▪ GCU Mitigation Reboot Fund (£5000) | Jul-Sep 2021 |
| ▪ University of Strathclyde Faculty of Science Masters Scholarship (£1000) | Mar 2021 |
| ▪ Royal Microscopical Society Summer Studentship (£2000) | Jun-Aug 2020 |
| ▪ Nancy Smilie Award 2016-2017 for Photography (Hillhead High School) | Jan 2017 |
| ▪ Bronze Duke of Edinburgh's Award | Nov 2016 |
| ▪ Charles Hepburn Scholarship Trust (Hillhead High School) | Sep 2016 |
| ▪ Netball Leaders Award (Hillhead High School) | Jan 2014 |

Interests

- Web development
- Server-side development
- Photography
- Going to the gym
- Swimming
- Reading
- Writing/blogging
- Cloud
- DevOps