

# AARON ALONSO TORRENS, PhD, MSc

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## PERSONAL PROFILE

**PhD Scientist** with expertise in **data analysis** and experience in **predictive modelling**, bringing strong **analytical thinking**, **problem-solving**, and **adaptability** developed in high-stakes scientific environments. Skilled in **Python**, **SQL**, **scikit-learn**, **Django**, **JavaScript**, **HTML/CSS**, and **data visualisation**, with hands-on experience designing and deploying **machine learning models** and **interactive dashboards**. Collaborative and confident in communicating insights to both **technical and non-technical audiences**, thriving in environments where **data-driven innovation delivers real-world impact**.

## TECHNICAL SKILLS

- **Front-End & Web Application Development:** Built responsive, user-focused applications using **HTML5**, **CSS3**, **JavaScript (ES6)**, and **Bootstrap 5**. Developed *MedTracker*, a **Django**-based web app with secure authentication, CRUD functionality, and analytics dashboards. Currently upskilling in **React** and **GraphQL** for dynamic data visualisation.

- **Data Visualisation & Interfaces:** Designing **dashboards** for complex datasets, incorporating trend analysis, filtering, and interactive visualisation features. Knowledge of **seaborn**, **matplotlib**, and **Streamlit**; experienced in presenting complex datasets through interactive visualisation.

- **Back-End & Database Management:** Skilled in **Django ORM**, **SQL** (raw queries & schema design), and data aggregation pipelines for healthcare/research analytics. Integrated third-party APIs (**Google Sheets API**, **Cloudinary**) to extend functionality.

- **UX & UI Design:** Proficient in **Figma** for wireframing and prototyping. Applied **mobile-first** and **accessibility** best practices (**ARIA**, semantic HTML, contrast compliance) for inclusive design.

**Scientific Data Analysis:** Strong background in biomedical data handling, including biomarker profiling, assay results, and statistical modelling. Tools include **Python (pandas, scikit-learn)**, **R**, **GraphPad Prism**, **ImageJ**, **Spotfire** and **CellProfiler**.

- **Deployment & Version Control:** Deployed full-stack projects to **Heroku** with environment variable management and cloud media hosting. Experienced in **Git/GitHub** workflows, branching, and pull requests for collaborative projects.

- **Project Management & Agile:** Managed multi-phase projects with Agile principles and Kanban tracking. Maintained >95% on-time delivery in high-throughput scientific environments.

- **Collaboration & Problem-Solving:** Partnered with researchers, bioinformaticians, and UX specialists to translate complex datasets into actionable insights and resolve technical challenges.

## KEY PROJECTS

### **Heart Disease Risk Predictor – ML Web App** [\[GitHub link\]](#)

*Python | Streamlit | scikit-learn | pandas | seaborn | Jupyter Notebook | XGBoost | LightGBM*

- Built and deployed an interactive **machine learning web app** in **Streamlit** to assess **heart disease risk** from **patient health metrics**.
- Designed **data preprocessing pipelines** (missing value handling, encoding, scaling, and feature engineering) in **Jupyter** for reproducible workflows and real-time predictions.
- Implemented and compared multiple **classification models** (**Logistic Regression**, **Random Forest**, **XGBoost**, **LightGBM**) with **hyperparameter tuning** to optimize **accuracy**, **recall**, and **F1-score**.
- Evaluated models using **cross-validation**, **ROC-AUC**, **confusion matrices**, and **feature importance** to ensure **robustness** and **interpretability**.
- Delivered an interactive **dashboard** enabling users to explore **risk predictions**, **feature contributions**, and **model performance metrics**.

### **MedTracker – Full Stack Medication Management App** | [\[GitHub link\]](#) [\[Figma link\]](#)

*Python | Django | Bootstrap 5 | HTML5/CSS | JavaScript | SQLite | SQL | Heroku*

- Developed a **full-stack application** enabling patients to track medications and side effects, featuring **role-based access control**, **CRUD functionality**, and a **visual analytics dashboard**.
- Designed and implemented a **responsive, mobile-first interface** with **Bootstrap 5**, ensuring **accessibility** and ease of use across devices.
- Created **gender-stratified analytics** and **category-based visualisations** using **raw SQL aggregation**, enabling **data-driven insights** for healthcare contexts.
- Integrated **secure authentication**, contextual tooltips, and **trend reports** for patients and clinicians.
- **Deployed to Heroku** with **environment variable management** and **Cloudinary** media hosting.
- A **Figma prototype** is available to explore all functionalities, as the live project's admin credentials are protected.

### **Super Mario Arcade – Browser Game Collection** [\[GitHub link\]](#)

*HTML5 | CSS3 | JavaScript | GitHub Pages*

Built two interactive browser games (Mario-themed tic-tac-toe and silhouette guessing) with responsive layouts and intuitive navigation.

EDUCATION

Full- stack developer, CodeInstitute, Specialization in predictive analytics and AI .....July 2024 – Present

- **Focus:** HTML5, CSS3, JavaScript, Python, Django, SQL, Agile development.
- **Portfolio:** five fully deployed projects including Medtracker and Heart Disease Risk Predictor.

PhD, Stem Cell Research, University of Edinburgh.....Oct 2018- Feb 2023

- **Thesis:** “Exploring the potential of Neural Progenitor Cells (NPCs) in spinal cord therapies”

MSc, Tissue Regeneration, University of Ulster, Merit.....Sep 2016 – Sep 2017

BSc (Hons), Biomedical Science, University of Ulster, First-Class Honours.....Sep 2013 – Jun 2016

MOST RELEVANT EMPLOYMENT HISTORY

Scientist, Artios, Cambridge ..... Apr 2024 - June 2025

- Streamlined data analysis pipelines in **Excel, Python, and GraphPad Prism**, improving efficiency by 60% and faster turnaround of insights.
- Designed and analyzed 40+ experiments with >90% reproducibility, applying **statistical methods and quality controls** to ensure robust datasets.
- Collaborated with CROs and internal teams to translate biomarker and imaging data into **strategic decisions on patient stratification**.
- Created **dashboards, reports, and posters** to summarize large, complex datasets into clear, stakeholder-ready insights.
- Delivered actionable **data-driven recommendations** to support cross-team decision-making in target validation.

Field Marketing Representative - Proteintech.....Jun 2022 –Febr 2023

- Delivered technical presentations and workshops to **100+ researchers**, supporting upskilling in key assays and techniques.
- Collected and analyzed user feedback in **Excel and survey datasets**, identifying trends that informed strategic marketing decisions.
- Synthesized technical results into **clear visual reports** improving stakeholder understanding and engagement.
- Collaborated with sales and product teams to align data insights with business objectives.

Intellectual Property Internship - Marks & Clerk.....May 2021 –Aug 2021

- Conducted **technology scouting, data mining and trend analysis** across 50+ companies in **AI and biomedical innovation**.
- Prepared **landscape reports and visual summaries** of complex IP and market data for attorneys and clients, enabling data-informed decisions.
- Consolidated insights from **scientific publications, patent databases, and regulatory sources** into concise, stakeholder-ready recommendations.

ACHIEVEMENTS

- **Runner-up for the Wilmut Prize Award**, recognizing research and presentation excellence.
- **Conference Presentations:** Poster presentations at BSDB and ISSCR conferences.
- **Bioprocessing Entrepreneurial Skills Training (BEST) Programme Graduate**, focusing on leadership and business development.
- **Dean’s List Award & Ulster University EDGE Excel Award**, highlighting sustained academic excellence.

LANGUAGES

Spanish.....Native speaker

English .....Native speaker

REFERENCES

Associate Director, Dr Andrew Whale..... [andrew.whale@immunocore.com](mailto:andrew.whale@immunocore.com)  
Immunocore Limited

Professor Valerie Wilson.....+44131 651 9500 [v.wilson@ed.ac.uk](mailto:v.wilson@ed.ac.uk)  
The University of Edinburgh

FIRST AUTHOR PUBLICATION

Long-term supplementation with anthocyanin-rich or -poorRubus idaeusberries does not influence microvascular architecture nor cognitive outcomein the APP/PS-1 mouse model of Alzheimer’s disease

Aaron Alonso Torrens et al., INTERNATIONAL JOURNAL OF FOOD SCIENCES AND NUTRITION. NOV 30, 2022