XI YANG (IAN), AMRSC

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PERSONAL PROFILE

I am a self-disciplined and passionate MSc Bioinformatics student and MChem graduate at the University of Edinburgh. With extensive experience in the pharmaceutical industry, combined with ongoing specialisation in bioinformatics (fluency in 3 programming languages & Machine Learning techniques), I aim to leverage the power of AI and biomedical research to improve health outcomes.

EDUCATION

MSc Bioinformatics *expected Distinction* **| University of Edinburgh, UK**
SEPTEMBER 2023 – AUGUST 2024 (EXPECTED)
My 2 Master's degrees train me not only to understand practical Chemistry & Biology knowledge, but also developed my competency in programming and to apply computational skills in extracting valuable insights from high-throughput data. I am experienced with the collection & analysis of large datasets to produce high quality & comprehensive reports.

Computational Skills:

- ✓ **Machine Learning:** Proficient in using **TensorFlow** and **Scikit-Learn** for developing deep learning models e.g., LSTM/RNNs to analyse time series data, CNNs for computer vision; LLM for sentiment analysis to influence decision making; diffusion model for molecular generation; CUDA for HPC.
- ✓ **UNIX Shell/Bash Scripting:** Developed bioinformatics pipelines for automating sequence data quality check (**fastqc**), sequence alignment (**bowtie2**, **samtools**), genome coverage (**bedtools multicov**) and expression level calculations for high-throughput genomic data.
- ✓ **Python:** Practical use of various python libraries, e.g., Object-oriented Python, pandas, matplotlib to develop interactive bioinformatics programs to perform multiple sequence alignment (**clustalo**), conservation analysis (**plotcon**) and protein function prediction (**patmatmotif**, **pepstats**) of large datasets retrieved from biological databases e.g., NCBI;
- ✓ **Website Development:** Developed a modern, interactive drug discovery website to access large databases, to access OpenAI API and to visualise moleculeS, using **Javascript, PHP, HTML and CSS**
- ✓ **Familiar Software/Platforms:** Git, Conda, VSCode, Vim; Flare, AutoDock, rDock, PyMol, ChemDraw

Awards:

- ✓ **2023 Community Prize:** Recognition of my outstanding contribution to the School of Chemistry
- ✓ **Student Experience Grant:** Secured over £4500 to foster industry-academia collaborations
- ✓ **5 x Edinburgh Awards:** Recognition of my involvement in a wide range of extracurricular activities

MChem (Hons) Medicinal & Biological Chemistry *2:1 degree* **| University of Edinburgh, UK**
SEPTEMBER 2018 – JULY 2023

IB & IGCSE | St Leonards School, St Andrews, UK
SEPTEMBER 2014 – JUNE 2017

RELEVANT EXPERIENCE

MSc Project Student *Supervisor: Dr Antonia Mey* **| University of Edinburgh, UK**
FEBRUARY 2024 – PRESENT
Research topic: Drug Discovery Strategies for Metallo ß-lactamase (MBL) using Diffusion Models for Molecular Generation

Research Skills: Independently & collaboratively scouted routes to identify research gaps and drafted research proposals

Self-Led Project Student *Supervisor: Dr Antonia Mey* | University of Edinburgh, UK

SEPTEMBER 2020 – JUNE 2021

Computer-Aided Drug Design: Conducted a **molecular simulation & docking analysis** of the main protease of SARS-CoV-2 with a library of ligands using **Flare, AutoDock** and **rDock.**

Teamwork: Collaborated effectively with an interdisciplinary team of chemists and biologists, identified learning resources, trained each other, and organised workload to deliver maximum productivity.

Critical Thinking: Using medicinal chemistry knowledge, interpreted and evaluated computational results obtained to screen drug targets and candidates.

Project Coordinator | School of Chemistry, University of Edinburgh

AUGUST 2023 – PRESENT

Project Management: Through frequent use of **Gantt charts**, led the development of a new student support model, effectively balanced academic commitments, anticipated and accommodated stakeholders' diverse schedules and consistently delivered project goals on time.

Communication Skills: Through effective communication strategy, collaboration with industrial & academic stakeholders and persuasive efforts with funding bodies, **secured over £4500** to offer 40 student site visits and spearheaded an unprecedented academia-industry collaboration.

Leadership Skills: Led and supported 10 student leaders to creatively problem-solve and guide other students, facilitating teambuilding and peer mentorship.

Website Development: Designed and developed an interactive website for student support resource management using **HTML, Javascript and CSS**, increased student engagement by 2800%; competent use of git for version control and website hosting.

Process Development Chemist | Veranova, Edinburgh, UK

JULY 2022 – JULY 2023

Research Skills: Evaluated research landscape in a **literature review** to inform future work.

Problem-Solving Skills: Approached problems by investigating root causes & researching the relevant literature; operated, maintained and troubleshot technical issues with analytical equipment routinely.

Analytical Skills: Routinely used **Excel formulas and macros** to accelerate the analysis of a large amount of experimental data to produce high-quality product quality profiles.

Organisation Skills: Routinely planned, assessed risks, and carried out work independently. Through careful planning, safely performed dangerous experiments on my own under time constrain.

Good Manufacturing Practices: Maintained data integrity and quality by consistent use of Electronic Lab Notebook to ensure **accurate, complete, and legible documentation** as per ALCOA+ principles.

Communication Skills: Concisely and accurately summarised project work in frequent technical reports and site-wise presentations to inform colleagues from non-scientific backgrounds.

Sustainability: Played a substantial role in 2 sustainability projects, resulting in the annual **cost reduction** of at least 230k litres of hazardous chemicals upon full implementation.

Scientific Writer | Edinburgh University Science (EUSci) Magazine

SEPTEMBER 2020 – SEPTEMBER 2021

Science Communication: Thoroughly researched to understand the science behind popular global issues such as plastic pollution, global warming, and ecological preservation; **presented 2 scientific articles** in plain and simple language to serve a non-scientific audience.

SKILLS, ACTIVITIES & INTERESTS

Languages: Mandarin | English | French | Teochew | Cantonese

Interests: Event planning, singing, hiking and involvement in educational & technological communities.