Abhay Sagar | abhaysagar.com | abhaysagar.cv@gmail.com

1 Academia

Bachelor's Degree Natural Sciences Tripos, University of Cambridge, 07/2022

> Physics (3yrs), Mathematics (2yrs), Chemistry (2yrs), Material Science (1yr)

Literature Research Review produced under Dr S E Dutton of Dutton Research Group, 05/2022
Improvements in Performance of All Solid State Batteries Through Research on Interfaces

- Interrogated primary literature via the web and library resources.

- Developed the critical faculties to summarise, explain and present an informed view of the state of knowledge in the research field. Distinguishing between widely known/accepted views and more speculative/less developed theories.

- Presented the work in an appropriate style: in formal writing (utilising LaTeX text-processing package) and orally (in an interview presentation to professors).

Experiments conducted under: Dr Tijmen Euser of the NanoPhotonics Centre, 12/2021; Dr David Ward, 03/2022
Coherence and Information in a Fibre Interferometer;
Scanning Tunnelling Microscopy: Oxidation of Graphite: Kinetics on the Atomic Scale

- Computed simulations from theoretical literature contrasted with experimental results.

- Collected data from niche devices to analyse with Python, but also specialist software too.

- Devised experiments to: test established theory, verify equipment specifications, investigate physics of fringe cases and isolate behaviour in differing time scales.

- Automated data collection and deduced suitable sampling windows to account for errors.

2 Employment

Tax Accountant at Justa & Co. Certified Chartered Acountants Ltd., 02/2023

- Calculated and Submitted Capital Gain Returns for sales of properties and cryptoassets in accordance with HMRC policies and maximising allowances for tax-efficiency.

- Created a faster workflow for processing bank statements, invoices and ledgers to be coded and integrated into the existing Sage accounting software environment.

- Optimised Excel spreadsheet templates for tripling processing speed & stability and added documentation for subsequent annual adjustments to tax allowances.

- Established a server archival system for client documents received from client meetings, postage, emails and messaging apps, solving a backlog issue of >1000 clients.

- Took interim managerial role of Personal Tax department in senior manager absence in the approach to the annual tax deadline: met/interacted with the bulk of clients ($\sim$25/day); was main liaison with other departments and international office, audited & revised prepared accounts and delegated accounts to staff to balance workloads & train a well-rounded team.

3 Computational Repertoire

- **General**: Python, C/C++, bash, Git, Office suite, LaTeX, Linux, Wordpress

- **Scientific**: MATLAB, PicoScope, ImageJ, Wolfram Mathematica, Nanosurf Easyscan, Gwyddion, Avogadro, ORCA, UVProbe

- **Skills**: Curve fitting to data, Correlation testing, 3D plotting, Function interpolation, Numerical integration, Euler & Range-Kutta methods to solve ODEs, Gauss-Jordan Elimination, Discrete Fourier Transforms, Vectorisation, Interfacing to external liberies, Revision control

4 Certifications & Awards

A-Level Maths, Further Maths, Physics, Chemistry; 4A* from WQE College, 07/2019
Lockheed Martin Scholarship in Partnership with University of Leicester & Senior Space School UK
UKMT Senior Mathematical Challenge Best in Year Award & Senior Kangaroo Qualification 2018