

Rob Welch

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SKILLS

Strong and extremely varied computing background - Python (imperative, OOP and declarative styles, data analysis, data visualisation, GUI and CLI design and implementation, optimisation, refactoring, documentation and code maintenance), C++ (computer simulations and high-performance computing), Mathematica (symbolic computing) and other general-purpose computing skills (Git, Hg, LaTeX, system administration, GNU+Linux, CMake, MPI, HTML, CSS, JS/jQuery, WordPress, XML, JSON, Raspberry Pi/Arduino, MS Office).

Highly developed communication and writing skills - visual communication, presentations, lab reports, technical whitepapers, code and process documentation, video production and editing, short stories. Ability to write with clarity, brevity and entertainment value on topics at any level.

Design and UX for websites and applications with complex inputs, user experience and usability design. Usability work shortlisted for the Engineering Development Trust's Future Industry Leaders Award. Gave presentation entitled 'Information Engineering' at STFC and ARUP headquarters on how user experience design can have a huge impact sales and customer satisfaction for technical institutions.

Teamwork, collaboration and interpersonal skills - have worked in teams both large and small, crossing many disciplines - physicists, mechanical and electronic engineers, web developers, graphic designers, illustrators and musicians. Experience in working on complex software projects using version control. Have led projects in engineering, design and software development. Strong organisational skills and a desire to organize and streamline collaboration.

UNIVERSITY

Bachelor of Science, Physics, 1st Class Hons
University of Leeds, UK - 2012-2016

IOP-accredited Physics degree with experience in vector calculus, thermodynamics, photonics, computing, logic, biophysics, statistical mechanics and stochastic calculus. Fine-tuned problem solving and reasoning skills. Hands-on experience with a variety of experimental and computational research projects. Final year project in biological simulations: generating and parameterising models, running simulations and writing analysis tools for data from coarse-grained simulations of biological molecules using Fluctuating Finite Element Analysis. The results of these simulations have real research applications and have been presented internationally.

EXPERIENCE

Research Postgraduate

Oct 2016 - Present

University of Leeds, UK

- Developing a mesoscale simulation model for long chain proteins, by modelling them as fluctuating, extensible elastic rods, as part of the FFEA software package.
- Investigating the application of current simulation technologies to the NDC80c kinetochore protein complex and its role in cell division.
- Working collaboratively with cell and molecular biologists to place findings in a broader biological context.
- Updating and maintaining the FFEA (Fluctuating Finite Element Analysis) software package with new features, tools and documentation.

LED Test Engineer (full time, paid)

Jul 2014 - Sep 2015

Sharp Devices Europe, Oxford, UK

- Designed, executed, and documented procedure for LED thermal testing and performance optimisation, analysed data, produced technical documents and customer guides on thermal integration.
- Developed and maintained user-friendly GUI software tools relating to colour science and analysis of optical measurements, including automatic PDF report generation and cutting-edge performance metrics. Also optimized, refactored and further developed software to measure the uniformity of LCD displays.
- Designed and developed fully functional prototype for LED department website (sharpleds.eu) from scratch, helped secure funding for full project. Worked collaboratively with designers and developers from Oxford-based web agency Electric Studio for final product.
- Helped customers troubleshoot problems with light fixture design and improve performance and lifespan of LEDs in real products.

A-LEVELS

Physics A-level grade A

Biology A-level grade A*

Mathematics A-level grade B

Further Mathematics AS grade B

Psychology AS grade A

Philosophy AS grade A

GCSEs

8 GCSEs at grades B-A* including English Language A* and Maths A*.

INTERESTS

In my spare time, I design and develop websites, write short stories, compose electronic music, and make retro-style video games.

REFERENCES

Dr Sarah Harris - Researcher, University of Leeds
01133 433 816 / s.a.harris@leeds.ac.uk

Dr Alastair Grundy - Senior Project Manager, Sharp Devices Europe
01865 334 261 / alastair.grundy@sharp.eu