Saul Harwin

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I'm a recent Physics graduate (2:1 BSc) with a solid foundation in analytical thinking and problem-solving, and a growing passion for software engineering. Throughout university, I developed my technical and programming skills through a mix of coursework and self-directed projects, from writing simulations to experimenting with different tools and technologies. Now, I'm excited to bring that knowledge into a real-world development environment. Studying Physics taught me how to tackle complex problems in a logical, structured way and to think critically under pressure. These are skills that translate well into writing clean, efficient, and reliable code. Beyond academics, I also volunteer at a local sailing club, where I teach children and help coordinate group activities. This experience has really helped me build strong communication, leadership, and teamwork skills. These are qualities I bring to any collaborative setting. I'm actively looking for junior software engineering opportunities where I can continue learning from experienced developers, contribute to meaningful projects, and grow my career at the intersection of science and technology. If you're working on something exciting in that space, I'd love to connect.

Education

University of Sussex	**Key modules include:**	
2022 – 2025	Mathematical Methods	Quantum Mechanics
BSc Physics (2:1)	Scientific Computing	Electrodynamics

Uckfield College	**A Level Results:**	
2020 – 2022	Physics **(A)**	Computer Science **(A)**
	Mathematical Science **(A)**	

Projects – Additional Detail can be found on my website.

Weak Gravitational Lensing Analysis – Final Year Project, University of Sussex

- Modeled weak lensing effects in a synthetic galaxy cluster using the Singular Isothermal Sphere (SIS) model.
- Analyzed ellipticity data from 180,000 synthetic galaxies; extracted and modeled tangential shear profiles.
- Built a statistical fitting pipeline with error correction; achieved Single Isothermal Sphere model fit with $\chi^2 = 0.86$.
- Assessed noise impacts on mass estimation; identified limitations of SIS in dense core regions.
- **Tools:** Python (NumPy, SciPy, Matplotlib), statistical modeling, astrophysical data analysis & visualization.

Monte Carlo Simulations Dissertation – University of Sussex

- Applied Monte Carlo and MCMC methods in R to problems in probability, stochastic processes, and numerical analysis.
- Generated and validated random samples using inverse transform & Kolmogorov–Smirnov tests; applied importance sampling for expectation estimation.
- Implemented MCMC to explore Markov chain properties (ergodicity, aperiodicity, convergence) via random walk simulations.
- Solved Laplace & Poisson PDEs using Monte Carlo random walk methods, analyzing convergence and error vs computation trade-offs.
- **Tools:** R, MCMC, Importance Sampling, Probability Theory, Error Metrics, Statistical Validation.

Flocking Bird Simulation – Unity project using Boids algorithm
- Developed a real-time Unity simulation in C# to model flocking behavior using Boids rules (separation, cohesion, alignment).
- Tuned physics parameters for lifelike group dynamics; applied vector math and Unity physics for smooth agent movement.
- Gained experience in real-time rendering, behavioral modeling, and interactive simulation design.
- **Tools:** Unity, C#, Vector Math, Game Physics.

For additional projects and to see detailed descriptions of my projects please visit my website saulharwin.com

Other Experience
September – November 2025: Protech (Labourer)**:**
- Assisted in the construction of new residential properties, coordinating with multiple teams to meet strict deadlines and quality standards.
- Applied analytical thinking to identify and resolve on-site challenges efficiently, ensuring work stayed on schedule.
- Showed precision, adaptability, and continuous learning whilst following detailed technical plans and adapting quickly to changes
- Contributed to a strong safety culture by adhering to regulations and reporting potential risks, showcasing responsibility and attention to detail.
- Collaborated closely with supervisors and tradespeople, strengthening communication and teamwork under pressure.
- **Key Skills Gained:** Process improvement, adaptability, time management, and following structured procedures.

June – August 2024: Clover Construction Ltd (Labourer)
- Demonstrated strong time management skills by efficiently completing tasks within tight deadlines on a busy construction site.
- Gained practical problem solving experience by tackling on site challenges and adapting to changing work conditions.
- Trained in site safety awareness, including duty of care to colleagues, clients, and the public, and preventing environmental harm.
- Participated in toolbox talks and promoted positive safety interventions to maintain a safe working environment.
- Built strong client relationships through professional conduct and effective communication.
- Gained understanding of project timescales and collaborated with the project manager to help deliver work on schedule.
- **Key Skills Gained**: Problem-solving, team collaboration, task prioritization, attention to detail, workplace safety culture.

November – December 2023: Catsfield Christmas Tree Farm (Gardener)
- Quickly understanding customer's problems and acting to resolve them in a dynamic environment.
- Manager vehicle movements on site and in the car park during busy periods, ensuring site safety and that disruption on the public road was minimised.
- Carrying out agreed processes were adhered to, to maximise efficiency and ensure the job is performed correctly first time.
- **Key Skills Gained**: Operational efficiency, process following, customer service, situational awareness.

July - September 2022: CURIOUS TECH LTD (iPhone Technician)
- Diagnosed and repaired iPhones, delivering high-quality refurbishments to meet performance and cosmetic standards.
- Interfaced with customers to assess device issues, offering tailored technical advice and support.
- Entered and updated device information in the backend system to maintain accurate inventory and tracking records, ensuring an efficient and timely refurbishment proccess.
- Carried out strict data privacy by securely wiping devices and handling customer data in compliance with company protocols.
- **Key Skills Gained**: Technical diagnostics, user support, data integrity, secure handling of sensitive information — all relevant to software QA and debugging.

September 2021 – April 2022: La Stalla Pizzeria e Ristorante (Assistant Cook)
- Ensured customer allergies are understood and hygiene standards are maintained.
- Improved my communication skills in a fast passed work environment.
- Developed my capabilities to make quick decisions under high stress situations.
- **Key Skills Gained**: Multitasking, communication, working under pressure, interpersonal skills — key in agile dev environments and cross-functional teams.

2019 – Present: Volunteer: Pevensey Bay Sailing Club (Assistant Instructor)
- Working with a team planning and delivering concise teaching session for groups of 5 children (aged 7-16) in a safe manner.
- Creating a safe and comfortable environment to allow children to grow their confidence on the water and with their peers.
- Presenting information in various ways to engage children of different ages and learning methods.
- Maintained awareness of safeguarding policies and upheld a strong duty of care to ensure children's safety and wellbeing at all times.
- **Key Skills Gained**: Leadership, instructional clarity, adaptability, responsibility — transferable to mentoring, technical presentations, and collaborative software projects.

Awards and Certificates

Citb Health and Safety Awareness Certiticate: Developing my awareness of health and safety in the construction industy.

RYA First Aid Course: I have completed a first aid course that allows you to learn to become an Assistant Sailing Instructor.

Assistant Sailing Instructor: To become an instructor at Pevensey Bay Sailing Club I have passed a course.

RYA Dinghy Level 4: The Highest dinghy sailing certificate demonstrating advance sailing ability in varied conditions.

RYA Powerboat Level 2: Equiping me with the skills and knowledge needed to safely operate a powerboat.