Abby Stevenson

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Research-motivated Computer Science graduate with a strong focus on explainable and trustworthy AI for healthcare. I have experience developing and evaluating deep learning models for medical imaging, with interests in interpretability, robustness, and clinically meaningful model reasoning. I am currently studying an MSc in Advanced Computing with Artificial Intelligence and hoping to do a PhD in human-centred, clinically grounded AI systems.

Education

MSc Advanced Computing with Artificial Intelligence | 2025 – 2026 *(In Progress)*
University of Stirling
Notable Modules

- Advanced Programming with Python, Machine Learning, Mathematical and Statistical Foundations, Artificial Intelligence for Computer Vision, Artificial Intelligence for Natural Language Processing, Stochastic Processes and Optimisation

BSc (Hons) Computer Science (Artificial Intelligence) | 2021 - 2025
Heriot-Watt University
Graduated with a 2:1

Dissertation (Grade: A)
Deep Learning-Based Characterisation of TDP-43 Protein Aggregation in Amyotrophic Lateral Sclerosis (ALS) Using Transfer Learning, Attention Mechanisms and Explainable AI in collaboration with University of Aberdeen School of Medicine

- Conducted a literature review to inform methodology and project plan.
- Designed and implemented a deep learning model using DenseNet121 achieving 85.33% accuracy and Matthew's Correlation Coefficient of 0.7725.
- Employed transfer learning, Effective Channel Spatial Attention (ECSA), and self-attention to improve model focus and generalisability.
- Used Grad-CAM to visualise class-specific attention and enhance transparency.
- Evaluated performance using 5-fold cross-validation with multiple random seeds, prioritising stability and reproducibility through metrics such as standard deviation and coefficient of variation.

Notable Modules
- Data Mining and Machine Learning, Biologically Inspired Computation, Artificial Intelligence and Intelligent Agents, Statistical Modelling & Analysis, Data Visualisation & Analytics, Big Data Management and Software Engineering

HNC Computing | 2017 – 2018
Edinburgh College
B in Graded Unit

Notable Modules
- Computer Networks: Building Local Area Networks, PC Hardware and Operating Systems Essentials, Developing Software Introduction, Professionalism and Ethics in Computing, Team Working in Computing and Troubleshooting Computing Problems

Falkirk High School | 2011- 2017
Completed Highers in Mathematics, Computing Science and Graphic Communication as well as 5 National 5's including an A in English.

Projects

Portfolio Website (Ongoing)
- Designed and developed a responsive, accessible website to showcase academic and technical work.
- Built with HTML, CSS, and JavaScript, with a clean layout and interactive project sections.
- Deployed using AWS S3 for static site hosting and CloudFront CDN with HTTPS and caching.
- Integrated with Cloudflare for DNS management, HTTPS support, and redirect handling (e.g. www → non-www).
- Set up automated CI/CD pipeline with GitHub Actions, the site auto-deploys to S3 on push, with CloudFront cache invalidated on changed pages for seamless updates.

Raspberry Pi Bird Camera (Ongoing)
- Utilised transfer learning by using a TensorFlow-based pre-trained model achieving 94% accuracy in identifying bird species.
- Implementing real-time image processing for automated classification.
- Applied step-decay learning rate and momentum-based optimisation techniques for training.

Athena SWAN Summer Bursary Project (Completed 2023)
- Designed and developed a comprehensive four-lesson curriculum on Artificial Intelligence and Machine Learning, tailored for second-year high school students.
- Collaborated with academic supervisors to ensure the lesson plans met educational standards.
- Successfully delivered an engaging and interactive first lesson to students at Falkirk High School.

Experience

Customer Assistant | Tesco | July 2017 – Present
- Developed teamwork and communication skills as well as leadership skills by stepping up to do Team Leading shifts when needed.
- Leveraged excellent customer service skills to ensure a positive shopping experience for customers at the checkout and customer service desk.
- Effectively resolved customer concerns and complaints, demonstrating strong problem-solving skills and a commitment to providing solutions that meet customer needs.
- Provided guidance and training to new team members, facilitating their integration into the store's work environment.

IT Assistant | Alexander Ross Holdings Limited | June 2015 – August 2015
- Maintained and monitored the server room, the wireless network and other server infrastructure.
- Set up staff workstations with PCs, phones and laptops.
- Delivered on-site IT and AV technical support for staff.
- Set up equipment for employees, including installing cables and hardware.
- Installed software and operating systems on company computers.
- Restored data, operating systems, files, documents and drivers.
- Worked as a team with other IT Assistants to solve various issues.

Skills

- Python, Java, HTML, CSS, JavaScript
- TensorFlow, PyTorch
- NumPy, Pandas, Matplotlib
- Data Manipulation and Analysis
- Leadership
- Teamwork
- Problem-Solving
- Communication

References Available on Request