James Harrison

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PROFESSIONAL SUMMARY

Senior Biomedical Engineer with over 10 years of experience in cardiovascular device design and regulatory submissions. Proven track record of leading R&D teams to successful UKCA and CE marking approvals. Expert in 3D modelling, biocompatibility testing, and multidisciplinary project management aimed at improving patient outcomes.

WORK EXPERIENCE

Senior R&D Biomedical Engineer | Smith & Nephew | Hull, UK
May 2018 - Present

- Spearheaded the design and development of a next-generation orthopaedic implant resulting in a 15% increase in joint mobility longevity.
- Directed a £2.5M research project focused on biocompatible coating applications for advanced wound management devices.
- Managed a multidisciplinary team of 15 engineers and researchers to meet aggressive product launch timelines.
- Achieved CE marking and UKCA approval for two flagship products by streamlining the clinical data documentation process.
- Reduced prototype production cycles by 30% through the implementation of high-precision 3D printing workflows.

Biomedical Systems Engineer | Philips Healthcare | Cambridge, UK
Jun 2014 - Apr 2018

- Optimised signal processing algorithms for diagnostic imaging devices, improving therapeutic efficacy for patients by 22%.
- Conducted comprehensive Finite Element Analysis (FEA) on structural components of endoscopic tools to ensure durability.
- Facilitated over 50 risk assessment workshops following ISO 14971 guidelines to identify and mitigate potential failure modes.
- Collaborated with global manufacturing sites to transfer design specifications, reducing waste by £400,000 annually.
- Authored technical white papers and patent applications for three unique medical device innovations.

Graduate Biomedical Engineer | NHS England | London, UK
Sept 2011 - May 2014

- Assisted in the development of patient monitoring systems using CAD software for precise component modelling.
- Performed rigorous mechanical testing on biomaterials to verify compliance with MHRA safety standards.
- Documented experimental results for 10+ clinical feasibility studies used in regulatory filings.
- Maintained and calibrated laboratory equipment, ensuring 100% uptime for critical R&D operations.
- Supported Senior Engineers in the troubleshooting of post-market device performance issues within a hospital setting.

EDUCATION

University of Manchester | MSc (Hons) | Biomedical Engineering
Sept 2009 - May 2011

Imperial College London | BEng (Hons) | Biomedical Engineering
Aug 2005 - May 2009

SKILLS

AutoCAD & SolidWorks, MATLAB & Simulink, Python & C++, Finite Element Analysis (FEA), LabVIEW, Biocompatibility Testing, Medical Imaging (MRI/CT), Signal Processing, Materials Science, Biomechanics, UKCA & CE Marking, ISO 13485 Standards, Quality Management Systems (QMS), Clinical Trial Design, Risk Management (ISO 14971)

CERTIFICATIONS

Chartered Engineer (CEng) | Institution of Engineering and Technology (IET) (2019)
PRINCE2 Foundation | AXELOS (2016)

LANGUAGES

English (Native)
French (Professional Working Proficiency (B2))

ACTIVITIES

STEM Ambassador
Volunteering as a mentor for local secondary school students interested in engineering and medical technology careers.

IET Member
Active member of the Institution of Engineering and Technology, attending regular lectures on emerging biomechanical research.