Matthew Barty

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UX & HF Engineer | Data Scientist | Applied AI

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8 years of technical experience in leading, designing, executing, analyzing and communicating HFE projects for complex medical systems – Including surgical robots, neurostimulation implants, combination devices, satellite and comms, AI-enabled tools, and more.

| Technical Skills

UX Engineering	Project leadership, study moderation & in-depth interview, Task Analysis, HCI design, Quant & Qual research methods, Contextual inquiry, Questionnaire design
UX Design	Adobe Photoshop, Illustrator, InDesign, Premiere, Figma, ReactJS, JavaScript
Data Science (AI/ML)	Python, TensorFlow, LLMOps, Generative Diffusion (stable diffusion), Computer Vision, NLP, Matplotlib, Deep Learning (CNN & RNN), SQL, R
Applied Standards	IEC-62366-1 (2015), IEC-60601 (2015), ISO-14971 (2019), ANSI/AAMI HE-75 (2009)

| Professional Experience

UX, Human Factors Engineering, & Applied AI Consultant   2022 – Present
@ The Technology Partnership (TTP) | *World-Class Technology & Design Consultancy*

- Generated over £600k in consulting fees through leading HFE workstreams during the development of class ii & class iii MedTech system (e.g., neurostimulation implants, ocular implants, combination devices, etc.),
- Experience writing formative and summative (validation) usability study protocols and HFE / UE reports
- Experience writing Risk management documentation including user requirements specification, uFMEA, and preliminary hazards analysis documents
- Frontend research experience conducting early-stage Task Analysis, Heuristic Analysis, product landscaping, and stakeholder interviews / assumptions testing
- Keynote speaker and panelist at Digital Health World Congress, London 2023, discussing 'AI as a Tool for Accessibility in HealthTech'.
- Driving AI strategy at TTP through research, communication, developer advocacy, and tool prototyping using bleeding edge GenAI models (LLMs & Generative Diffusion) (🔗 mattbarty.com/projects)

Human Factors Engineer & Clinical Data Scientist   2018 – 2022
@ CMR Surgical | *Surgical Robotics Unicorn (startup experience, $3bn valuation)*

- Moderated successful full validation study of complex surgical robotics system ('Versius'),
- Planned, moderated, and reported on successful instrument reprocessing usability study
- Lead, designed, and executed 40+ smaller usability and clinical engineering studies for complex surgical hardware, and software features,
- Designed algorithms and systems that programmatically reviewed risk management documentation for inconsistencies, errors, or to ensure study protocols adequately covered relevant risk items
- CMR's first data scientist and responsible for programmatically processing novel, semi-structured real world clinical evidence

| Education

MSt	Healthcare Data Science	**University of Cambridge**, UK	2020 – 2022
BSc	UX, Ergonomics, & Human Factors	**Loughborough University**, UK	2014 – 2018