Charlotte **Brass**

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J1 or H1-B Visa Candidate

EDUCATION

University of Cambridge **Cambridge, England**
Doctor of Philosophy (PhD) in Medical Engineering *Oct 2020 - Present*

- With a concentration in brain biomechanics and traumatic brain injury

Cardiff University **Cardiff, Wales**
Master of Engineering (MEng) in Mechanical Engineering *Sep 2015 - Jul 2020*

- Graduated with First Class Honours, average grade of 82% or 4.0 GPA equiv.

EXPERIENCE

University of Cambridge **Cambridge, England**
PhD Researcher of Brain Biomechanics *Oct 2020 - Present*

- Building a finite element model in Abaqus of complex neurosurgical procedures using patient data
- Reduced computational cost of my model from 30 days to 2 hours by analysing diverse parameters such as mesh geometry, contact and density properties
- Communicated complex engineering concepts to cutting edge neurosurgery specialists clearly and concisely, incorporated their feedback
- Refined model via multiple rounds of iterative testing, recorded in a readable systematic log

Diamond Light Source **Oxford, England**
Mechanical Design Engineer *Jun 2019 - Sep 2019*

- Optimized the cryogenic sample preparation process of micron-sized protein crystals
- Evaluated risk to crystals during each stage of the optimization process
- Provided recommendations to improve the efficiency and quality of the procedure

Williams Racing (Formula 1) **Oxford, England**
Junior Design Engineer *Aug 2017 - Aug 2018*

- Created components for the quickest cars in the world in an evolving, fast-paced environment
- Designed parts used in radiator ducts, electronics packaging and fuel cell manufacture in NX CAD software using DFM and GD&T principles
- Managed full product life cycle (PLM) of these parts using Teamcenter version control software
- Maintained accurate records of service and lifing documentation for safety-critical parts to ensure traceability, accountability and regulatory compliance

SKILLS

Finite Element Analysis (FEA)	4 Years	ABAQUS
Computer Aided Design (CAD)	6 Years	NX • Creo • SolidWorks
DFM, GD&T, PLM Principles	6 Years	Teamcenter PLM
Basic Programming Skills	6 Years	python • Bash • LaTeX
Medical Image Processing	4 Years	Mimics • 3-Matic • MeshLab
MRI Brain Image Analysis	2 Years	FMRIB (FSL)

EXTRACURRICULAR

Sports: College rowing first team • Competition road cyclist Sep 2019 - Apr 2021 • Triathlon
Music: Piano Grade 8 • Flute Grade 8 • Aural & singing **Other:** Travel • Writing • Cooking