

JATINDER DHALIWAL

Creative and innovative Biomedical Engineering undergraduate. Proficient in biological sampling, cell assaying and culturing, and laboratory skills. Competent in troubleshooting, analysis and testing specifications and methods within experiments. Adaptable and quick-learning. Resourceful and practical with aptitude for solving challenges. Enthusiastic individual eager to contribute to team success through extensive research, attention to detail and excellent organisational skills. Motivated to learn, grow and excel in the biological and design fields.

KEY SKILLS

- Clinical Biosensors Review
- Cell Culturing using Bioreactor Technology
- 3D Printing and Microfluidics
- MTT Assaying for Cell Viability
- App and Machine Learning Model Development
- Scientific Reports and Conference Papers

CONTACT

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EDUCATION

Queen Mary University of London | MEng (Hons) in Biomedical Engineering (SEP 2022 - PRESENT)

- Modules include: Biocompatibility, Biomedical Device Development, Tissue Engineering and Regenerative Medicine, Cell and Tissue Mechanics, Clinical Sensors and Measurements.
- Final-year MEng Project: AI and Sensor Development for Skin Cancer Detection.

GEM Trailblazer Summer Programme | Nanyang Technological University (JUN 2024 - JUL 2024)

- Studied Bioprinting in Singapore and developed an understanding of the potential of biotechnology.
- Acquired knowledge of the current limitations of biotechnology & the future of the sector.
- Gained an insight into tissue engineering and the applications of hematopoietic stem cells.
- Visited NTU's School of Biological Sciences, the centre of extensive cell biology and stem cell research.

Chadwell Heath Academy | Romford, RM6 (SEP 2015 - JUN 2022)

- A Levels: Mathematics (A), Physics (A) & Biology (B).
- GCSEs: 9 A** - B, including A** in English Language, A* in English Literature and Combined Science.

KEY PROJECTS

AI and Sensor Development for Skin Cancer Detection (SEP 2025 - PRESENT)

- Developing a machine learning model for classification of skin lesions into benign or malignant classes.
- Utilising convolutional neural networks (CNNs) and deep learning for pattern recognition and training model analytical skills.
- Defining parameters to classify lesions based on the current methods used in professional dermatology.
- Integrating explainable AI to provide justification of each output, building on validated frameworks.
- Curating a dataset, adhering to strict requirements including minimal artefacts and dermoscopic images.
- Facilitating linkage to an image segmentation model and a front-end app design for GP use.

Precise Nutrient Delivery for a Tissue Engineering Bioreactor

(SEP 2024 - JUNE 2025)

- Developed a 3D printed CAD model for the reservoirs and chambers of a perfusion bioreactor.
- Adapted my design to fit the optimal flow rate of cell culture media to maximise proliferation.
- Facilitated adequate distribution of nutrients between cells by allowing linear flow close to reservoirs.
- Met sterilisation and specific material property standard to ensure a sterile environment for cell growth.
- Utilised fused deposition modelling (FDM) printing to print designs, adjusting parameters to save material.

Detection of Cardiac Troponin using Biosensors for Myocardial Infarction Diagnosis **(DEC 2025)**

- Assessed the clinical relevance of troponin as a key biomarker for myocardial infarction.
- Created diagrams showing experimental setups for amperometric and impedimetric biosensors.
- Identified the methods of sensor detection and diagnosis of cardiac disease.
- Evaluated pros and cons of each clinical sensor based on physiological and biochemical factors.

WORK EXPERIENCE

GCSE/A-Level Tutor | Tailored Teaching and SmartX Tutoring

September 2022 – PRESENT

- Delivering constructive feedback by analysing students' previous results and tailoring goals based on abilities.
- Providing effective learning methods for students of varying capabilities and learning styles.
- Preparing students for exams using mock tests, tailored study programmes and specific learning.
- Coaching students on academic concepts and explained terminology in easy-to-understand language.
- Aided 18 students to achieve an increase in predicted grades for GCSE & A Levels.

FORD Motor Company | Dagenham

Work Experience, May 2019

- Shadowed an engineer on the production line at Dagenham engine plant (1.8 Panther Diesel Engine).
- Torque-wrenched bolts to secure components in the assembly of an engine.
- Used Vernier calipers and measuring equipment to measure valve and component dimensions.
- Dyno testing for completed engines checking for failures and faults.
- Shadowed engineers in tooling operations using CNC machinery and 3D printers.
- Adhered to health & safety regulations.

AWARDS

- Certificate of Completion of NTU GEM Trailblazer Summer Programme
- Certificate of Achievement of 1st Place in Introduction to Robotics Mobile Robot Competition
- Basic Level First Aid / First Aid for Laboratory Workers / Fire Safety Awareness
- IBM Enterprise Design Thinking Practitioner
- IBM Enterprise Data Science
- IBM Enterprise-Grade AI
- 2nd Dan Black Belt in Kyokushin Karate
- Green Sash in Wing Chun

REFERENCES

Available on Request