Stacey Fiona Torres

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PERSONAL PROFILE

* A Master’s year Biomedical Engineering student interested in a career in healthcare, medical devices, and computing, looking to gain valuable experience through a work experience at HPRA Ireland.

SKILLS PROFILE

Technical: Working knowledge of programming languages MATLAB, Python, and R. Skilled in AI and Machine Learning Algorithms, Signal and Image Processing, SolidWorks, and Microsoft Office.

Analysis: Proficient in pre-processing, visualising, and evaluating data to formulate solutions and reports.

Research: Competent literature reviewer and grant proposal writer. Familiar with good laboratory practices.

Legislations: Knowledgeable in past and current EU and Irish regulatory bodies for medical device marketing.

Device Design: Experience in reviewing medical device design, patenting, QMS, and risk management systems.

Presentation: Produce reports to a publishable standard. Experience as a panellist and in public speaking.

Organisational: Effective at time management and prioritising tasks to meet deadlines.

Communication: Highly collaborative and enthusiastic, with strong listening skills.

Languages: Fluent in English and Filipino. B1 level in Spanish. A1 level in Catalan.

EDUCATION

2019-2024 MAI Biomedical Engineering (NFQ Level 9)

Trinity College Dublin, Ireland

* 1st , 2nd , 3rd , and 4th year results: 1st class honours. (Expected to graduate with a 1st class honours)
* 5th year thesis project: *Towards Improved Breast Cancer Detection: A Breast Radar-based Image Quality Analysis Framework*. Created a complete signal and imaging analysis framework for the project.
* 4th year International Exchange Student in the University of Barcelona, Spain.
* Relevant modules include Medical Device Design, Active Implantable Devices, Digital Signal Processing, Neural Signal Analysis, Biomedical Design Thinking, and AI in Biomedical Engineering.

2013-2019 Leaving Certificate (520 Points)

Mercy Secondary School Inchicore, Ireland

* Honours level in Physics, Mathematics, English, Spanish, Home Economics, and Business.
* Recipient of the Trinity College Entrance Exhibition Awards 2019.

WORK EXPERIENCE

July-Aug 2023 Research Internship, Radiomics Group (extract information from medical images using algorithms)

BBVA-Severo Ochoa Summer Internship: Vall d’Hebron Institute of Oncology (Barcelona, Spain)

* Use of Python, R, and a Deep Learning network to create an automatic lung tumour segmentation   
  tool for CT images of immunotherapy patients to assess change in burden of disease evaluation.
* In charge of whole project pipeline: data collection, pre-processing, evaluation, and visualisation.
* Achieved automated model scores of up to 0.80 volumetric overlap (DICE) for predicted CT images.
* Project findings to be part of a greater collective paper to be published by the Radiomics Group.

PROJECTS

5th Year (2024) Mock Research Proposal to IRC: Sacral Neuromodulation Device for Interstitial Cystitis Management

* Paired study to create a complete grant proposal on Neuromodulation for Irish Research Council.
* Presented research gap and potential medical device market strategies to an audience.
* Partnered with MSc Regulatory Affairs students to design trial protocols and evaluate risks.
* Created Work Packages according to the EU and National Regulations on medical devices and trials.

5th Year (2023) Neural Signal Analysis: An EEG Study on Simulated Glaucoma in Visual Evoked Potentials (VEPs)

* Grouped EEG study to examine the potential of VEPs in detecting a visual impairment (glaucoma).
* Helped design an EEG experiment protocol: data collection, pre-processing, and analysis.
* Employed EEGLab through MATLAB Programming and carried out comparative analyses.

4th Year (2023) AI in Biomedical Engineering: Machine Learning Algorithms for Diabetes Classification

* Individual project to create a full data analysis and visualisation pipeline using AI, available [here](https://github.com/staisooo/ML_Diabetes_Classifier).
* Applied appropriate pre-processing such as normalisation, feature engineering, over/undersampling.
* Use of Random Forest and Support Vector Machine Algorithms in classifying the dataset.
* Obtained validation metrics, scores, and ROC curves to assess the performance of applied algorithms.

3rd Year (2022) Signal Analysis Project: Gait Dynamics in Neurodegenerative Diseases

* Design of a MATLAB algorithm to investigate gait in subjects with Parkinson’s, Huntington’s, and ALS.
* Performed outlier removal and gait data pre-processing. Visualised and quantified results.
* Project furthered by carrying out additional tests for dynamic stride descriptors. (Grade: 100%)

3rd Year (2022) Signal Analysis Project: Abnormal ECG detection for Myocardial Infarction

* Design of an R-peaks detection algorithm to investigate ECG of subjects with MI.
* Performed ECG data processing and pattern analysis. Visualised and reported results.
* Compared findings to existing research, studies in ECG, and in other cardiovascular diseases.

2nd Year (2021) Engineering Design Project: Electronic Buggy

* Grouped project to assemble a working buggy using sensors, motors, and an Arduino.
* Worked with C programming and Processing (GUI features). Used GIT for version control.
* Passed all required challenges: line following, obstacle stopping, and PID control demonstration.

OTHER EXPERIENCE

2022-2024 Vice-Chair, Student Branch Chapter, Bioengineering

IEEE-EMBS (Engineering in Medicine & Biology Society)

* Helped in organisation of meeting minutes and student branch committee elections while abroad.
* Acts as a liaison and communicates with other staff and students to coordinate branch activities.

2021-2022 Trained Barista

Insomnia Coffee Company

* Delivered exceptional customer service that led to increased customers, sales, and satisfaction.
* Worked alone to serve beverage at a fast pace while maintaining a clean workspace.
* Licence to work training received from Dublin Barista School (2020).

2019-2022 Student Ambassador

Trinity Access (to widen access and participation at 3rd-level for under-represented groups)

* Took part in multiple student panels and interviews on behalf of Trinity Access.
* Student representative for a 3-day conference at Lady Margaret Hall, University of Oxford, England.

2019-2021 Community Mentor

College Aware Ireland

* Orchestrated face-to-face and virtual campus tours for secondary school students.
* Directed workshops for student groups in preparation of third level progression.
* Worked with peers from other universities to facilitate multiple mentoring sessions.

INTERESTS AND ACHIEVEMENTS

Societies and Clubs: Member of Table Tennis and Volleyball sports clubs in Trinity. Former member of Trinity DSC Technology society. Took part in Code First: Girls programme in 2019.

Interests: Currently improving Spanish speaking proficiency. Non-academic interests involve playing the guitar, cooking, and travelling to meet different people from various cultures. Highly curious about AI in healthcare and have carried out online Datacamp courses in data manipulation, Machine Learning in Python, and supplemental MATLAB courses.

REFERENCES

Dr. Raquel Perez-Lopez, Principal Investigator, Radiomics Group, Vall d'Hebron Institute of Oncology (Barcelona, Spain)

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Dr. Michael Monaghan, Associate Professor, Mechanical, Manufacturing & Biomedical Engineering, Trinity College Dublin

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