

# Dr. Anvesha Sarkar

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**LinkedIn:** Anvesha-Linkedin **GitHub:** Anvesha-GitHub

**Google Scholar:** Anvesha-GoogleScholar



## PROFESSIONAL PROFILE

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PhD-trained translational scientist with expertise in complex in vitro models, and microenvironment-driven disease mechanisms and regeneration biology,. Experienced in designing and executing interdisciplinary research combining advanced experimental systems (spheroids, organoids, tumor-on-chip, lung fibroblast models) with computational analysis to investigate cellular interactions and tissue dynamics. Strong background in extracellular matrix (ECM) biology,cellular heterogeneity, and high-dimensional data integration, with a growing focus on mechanisms of tissue regeneration and fibrosis resolution.

## WORK EXPERIENCE

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### Postdoctoral Researcher (Guest Research)

TU Darmstadt – Department of Synthetic Biology, Germany

Sep 2025 – Feb 2026

- Developed and applied organ-on-chip models using lung fibroblast cells to study microenvironment-driven biological responses
- Investigated ECM and cell–cell interaction dynamics in controlled in vitro systems
- Designed and executed experimental strategies to model tissue-like environments and biological responses
- Translated experimental findings into mechanistic insights through integrated data analysis
- Collaborated across interdisciplinary teams (engineering, biology, computational science)

### Research Associate (PhD – Translational Medicine)

University College Dublin – School of Medicine, Ireland

Jan 2020 – Dec 2024

- Independently led a multi-year research project integrating experimental biology and computational analysis
- Designed and optimized 3D in vitro models (organoids, microenvironment systems) to study disease mechanisms
- Investigated extracellular matrix interactions and tumor microenvironment dynamics, relevant to tissue remodeling processes
- Analyzed high-dimensional datasets (imaging, molecular assays) to derive biological and mechanistic insights
- Applied machine learning approaches to support data interpretation and hypothesis generation
- Worked with transcriptomic datasets (via GitHub projects), supporting data-driven biological discovery
- Collaborated closely with clinicians and interdisciplinary stakeholders
- Presented findings at international conferences and contributed to peer-reviewed publications
- Supervised and mentored junior researchers and students in experimental and analytical work

### Research Intern – AI in Diagnostics

Deciphex Pvt Ltd, Dublin, Ireland

Sep 2019 – Dec 2019

- Developed AI-driven digital pathology pipelines for classification and predictive modeling of clinical imaging data

- Applied feature extraction and statistical analysis to identify tumor-associated patterns
- Collaborated with pathologists and engineers to translate analytical outputs into clinically relevant insights
- Contributed to development of data-driven diagnostic tools for pathologists using AI

## TECHNICAL SKILLS

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**Experimental & Regeneration Biology:** Advanced in vitro models: 3D culture, organoids, organ-on-chip, lung fibroblast and microenvironment-based systems, extracellular matrix (ECM) biology and cell-cell interaction studies, Experimental design, assay development, and model optimization

**Molecular & Cellular Techniques:** Flow cytometry, ELISA, Western blotting, quantitative analysis of cellular responses and phenotypes

**Data Analysis & Omics Integration:** High-dimensional data analysis (imaging, molecular datasets), Python (scikit-learn, PyTorch), R, MATLAB, exposure to transcriptomic and single-cell datasets (analysis pipelines via GitHub)

**Scientific & Professional Skills:** Independent project design and execution, Hypothesis-driven research and data interpretation, scientific communication (publications, conferences), mentoring and supervision of junior researchers, interdisciplinary collaboration in research environments

## EDUCATION

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### PhD – Translational Medicine & Computational Biology

University College Dublin, Ireland

2020 – 2024

### MSc – Biological & Biomolecular Sciences

University College Dublin, Ireland

Grade: 3.56/4.2 ( 1.9 = German Equivalency)

### BSc – Life Sciences (First Class Honours)

University of Delhi, India Grade : 8.6/10 ( 1.7 = German Equivalency)

## ADDITIONAL INFORMATION

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- Authored peer-reviewed scientific publications, translating complex biomedical findings into clear, structured narratives
- Presented research at international conferences to multidisciplinary audiences
- Communicated analytical results and project outcomes to clinicians and collaborators through presentations and reports
- Translated high-dimensional data into interpretable insights to support decision-making
- Experienced in structuring scientific content for both expert and non-expert audiences

## CERTIFICATIONS

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GMP, GCP & GLP Training – GMP Academy (16.02.2026-20.02.2026)

## LANGUAGES

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English (C2) — German (B2 professional working proficiency, C1 ongoing)