

# Anshuman Sinha

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## EDUCATION

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- PhD in Physics** Paris, France
  - Collège de France, Université Paris Cité Nov 2024 - Nov 2027 (exp.)
  - Supervisor: *Dr. Hervé Turlier*
  - **Lab:** Multiscale Physics of Morphogenesis ([↗](#))
  - **Thesis Title:** Forward and inverse modelling of cleavage patterning in early embryos
- Masters M2 in Mathematics, Vision and Learning (MVA)** Paris, France
  - Institut Polytechnique de Paris Oct 2023 - Oct 2024
  - **Grade:** 16/20
  - **Relevant Courses:** Deep Learning in Practice, Reinforcement Learning, Computer Vision, Robotics
- Bachelor of Technology in Electrical Engineering** Surathkal, India
  - National Institute of Technology Karnataka ([NITK](#)) Jul 2018 - May 2022
  - **Major:** Electrical Engineering; *GPA: 9.16 /10*
  - **Minor:** Information Technology; *GPA: 9.00 /10*

## RESEARCH EXPERIENCE

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- Project Associate** Bangalore, India
  - Indian Institute of Science (IISc) : [Visual Information Processing Lab](#) June 2023 - Sep 2023
  - Supervisor: *Prof. Rajiv Soundararajan*
  - **Generative Image Quality Assessment:** Designing deep learning methods to determine the quality of images produced by Generative AI models.
- Visiting Master's Valorization Intern** Lausanne, Switzerland
  - École Polytechnique Fédérale de Lausanne (EPFL) : [Biomedical Imaging Group](#) Oct 2022 - Apr 2023
  - Supervisor: *Prof. Michael Unser*
  - **Steerability in 3D for Orientation Estimation:** Using steerable filters with spherical harmonic bases for one-shot 3D orientation estimation in continuous domain.
- Bachelor's Thesis** Cambridge, UK
  - European Bioinformatics Institute (EMBL-EBI) : [Uhlmann Group](#) Dec 2021 - Sep 2022
  - Supervisor: *Dr. Virginie Uhlmann*
  - **Deep Reinforcement Learning for Active Contour modelling:** Theorised and designed algorithm to detect instances in bio-images by formulating continuous control on spline models as an RL paradigm.
- Research Intern** Remote
  - Carnegie Mellon University (CMU) : Xu Lab July 2021 - Sep 2021
  - **Unsupervised Learning:** Implemented PUB-SalNet and Double U-Net to analyse 3D cryo-ET images of sub-cellular tomograms for unsupervised classification of particles on unlabelled data.

## PUBLICATIONS

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- S. Ichbiah, **A. Sinha**, F. Delbary, H. Turlier\* (2025). "Inverse 3D microscopy rendering for cell shape inference with active mesh" [arXiv:2303.10440](https://arxiv.org/abs/2303.10440). Accepted to the: *International Conference on Computer Vision (ICCV) 2025*.

## WORK EXPERIENCE

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### Research Intern

Paris, France

- R&D Vision

April 2024 - Present

- **Data Augmentation and Synthetic Data Generation:** Analysing the effect of different data strategies based on generative techniques to augment low volume datasets with a focus on railways and agricultural data.

### Software Intern

Bangalore, India

- Texas Instruments

May 2021 - July 2021

- **Data Analytics:** Generated metrics and analysis for temporal and spatial performance of 500+ Deep Learning models trained in-situ on physical chips. Additionally developed algorithm to automate memory optimisation.
- **Web Development:** Designed a cached data-intensive and interactive visualisation tool catering to raw multimodal data parsed directly from hardware.

## SKILLS

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### Technical Skills:

- Operating Systems: Windows, Linux
- Programming Languages: Python, Matlab, Java, C
- Tools: Git, PyTorch, TensorFlow, MySQL, Streamlit

**Proficiency in English:** IELTS Band 8.5/9.0

## REFERENCES

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### Dr. Hervé Turlier

- Principal Investigator, Multiscale Physics of Morphogenesis  
CNRS Researcher, Collège de France
  - **Email:** herve.turlier [at] college-de-france.fr

### Dr. Virginie Uhlmann

- Director, BioVisionCenter at University of Zurich  
Visiting Group Leader, European Bioinformatics Institute (EMBL-EBI)
  - **Email:** virginie.uhlmann [at] uzh.ch / uhlmann [at] ebi.ac.uk