Athul **Sivan**

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Personal Information

Citizenship: **Indian**

Languages: **English** (Fluent), **German** (A1)

Profile

With a PhD in Quantitative Cell Biology, I have extensive experience in image processing, data visualization, and using advanced computational tools to analyze large-scale microscopy data.

I am keen to apply data-driven approaches to optimize bioprocessing and enhance development predictions, contributing to innovation in biopharmaceuticals. I am particularly motivated by the opportunity to integrate computational and experimental insights to improve efficiency and ensure scientific advances translate into meaningful patient-centered healthcare solutions.

I am driven by a commitment to continuous learning and thrive on applying my analytical mindset to solve complex problems. I look forward to working in collaborative, goal-oriented teams to tackle challenges with curiosity, determination, and creativity.

Research Experience

Data Science Intern at *Science to Data Science - (Sheffield, England (Remote))* **2025.02–pres.**

◇ Developing and mantaining GitHub collaborative repositories ◇ Silicon sampling- Synthetic survey responses using LLM (Text preprocessing, tokenization, and cleaning) ◇ Model testing ◇ Data analysis and visualization ◇ Teamwork and Agile Management.

Bridging Post-Doctoral researcher at *Universitätsklinikum (Münster, Germany)* **2024.09–2024.12**

◇ Single molecule fluorescence imaging and time-series analysis. ◇ Basic Bioinfomartics- ChIP-seq Analysis ◇ Scientific writing, Data visualization and statistics. ◇ manuscript preparation, submission, and revisions.

PhD researcher at *Cells in Motion- International Max-Planck Research School (Münster, Germany)* **2018.10–2024.09**

◇ Conducted high-throughput imaging and data collection. ◇ Developed a multi-scale analysis framework and automated workflows for profiling cellular morphology (Python, MATLAB). ◇ Machine learning-based image segmentation and feature extraction (Python). ◇ Statistical analysis and visualization of high-dimensional datasets. ◇ Interpretation and annotation of protein structures.

Research Assistant at *Indian Institute of Science Education and Research (Kolkata, India)* **2017.08–2018.06**

◇ Hands-on experience with advanced imaging techniques , Data collection, analysis and automation (MATLAB) ◇ Measurement and interpretation of membrane mechanics.

Research Internship at *Indian Institute of Technology (Mumbai, India)* **2015.05–2015.07**

◇ Modeled interaction kinetics of adhesive proteins and its effects on cell metastases.

Techincal Skills

◇ *(advanced > 2000 hrs); (intermediate: 100-2000 hrs), (basic: < 100 hrs)*

Programming

◇ **Python** (*intermediate*), ◇ **MATLAB** (*intermediate*), ◇ Bash (*intermediate*: scripting, automation) ◇ R (*basic*), C (*basic*) ◇ C (*basic*)

Repository management and version control

git(*intermediante*)

Data Analysis and Visualisation

◇ Pandas, NumPy, SciPy, Matplotlib, Seaborn ◇ Orignlab(*all intermediante*)

Proetien structure prediction and visualization

◇ Alphafold, Pymol, Chimerax (*all intermediate)*

Cell and Molecular Biology (*intermediante to advance*)

◇ Molecular cloning, Cell culture, Immuno-staining, Micropatterning, Fluorescent polarization assay, Pull-down assay.

Imaging(*intermediante to advance*)

◇ Total Internal Reflection Fluorescence Microscpy (TIRF), Confocal Microscopy, Super-resolution microscopy (PAINT), Interference Reflection Microscopy.

Image Analysis Tools

◇ Fiji/ImageJ (*Advanced*)◇ CellProfiler (Intermediate).

Relevant Workshop

- Bioinformatics- ChIP-seq Analysis
- Good Scientific Practice
- Project Management
- Bio-statistics
- Regulatory Affairs

Fellowships and recognitions

–Cells in Motion (CiM) International Max Planck Research Schools (IMPRS) Fellowship- **2018– 2020**

–Innovation in Science Pursuit for Inspired Research (INSPIRE) Fellowship- from Department of Science and Technology India **2012– 2017**

Conferences

-Cells in Action - Challenging the tango of life- 2023

-Through the lens of science - Insights into molecular mechanisms- 2022

-International European Light Microscopy Initiative Meeting- 2022

-Beyond the Barriers: New Perspectives and Advances in Life Science- 2021

-DGZ International Meeting- Life In Between - The Cell Biology of Interfaces- 2021

-Breaking the Frontiers: Modern Perspectives in Life Science- 2020

Hobbies

Badminton, Boomerang, Sketching

Education

Doctoral Degree in Biology Department of Biology. *University of Münster*. **2018 –2024**

◇ Thesis title: *Development of synthetic actin probes to characterize and modulate actin dynamics in cells.*

Integrated Bachelor-Master Degree -Biology. *Indian Institute of Science Education and Research*. **2012–2017**

◇ Thesis title: *Study of Membrane Fluctuations and Cortex Thickness on Differentiating Myoblasts.*

Inter-Personal Skills

◇ Organised teams, moderated sessions and presented at international conferences.

◇ Collaborated with research labs to published peer-reviewed articles.

◇ Provided teaching support and supervised bachelor student cohorts of up to 100, ensuring effective learning outcomes. Offered personalized mentorship through one-on-one supervision for master's students in intensive, month-long modules.

◇ Practiced Agile methodologies such as Scrum, daily stand-ups, sprint planning, and Kanban boards.

Publications

◇ ***Sivan, A.**, Belyy, A., Wedlich-Söldner, R. (2025). Characterization of Lifeact peptides . Manuscript under preparation*

◇ *Shatskiy, D., **Sivan, A.**, Wedlich-Söldner, R., Belyy, A. (2025). Structure of the F-tractin–F-actin complex. Journal of Cell Biology*

◇ *Chakraborty, M., **Sivan, A.**, Biswas, A., Sinha, B. (2022). Early tension regulation coupled to surface myomerger is necessary for the primary fusion of C2C12 myoblasts. Frontiers in physiology*