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Abhineet Ram, Ph.D.

Scientist / Computational Biologist

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Dedicated and passionate Computational Biologist seeking a fulfilling role in bioinformatics, image/data analysis, or computational biology. My background includes a comprehensive skill set in both wet and dry lab techniques, ranging from CRISPR screens to advanced machine learning applications. Expert on Ras / Extracellular-regulated Kinase (ERK) signaling.

Skills

Tools and Languages	Python, MATLAB, Git, R, Command-Line, SQL, Docker, ImageJ, MarkDown LaTeX
Quantitative Research	Data Analysis, Bioinformatics, Machine Learning, Image Processing, Statistics, Modeling
Wet Lab	Fluorescence/Confocal Microscopy, Mammalian Cell Culture, Multiplex Immunofluorescence, CRISPR
Professional	Teaching, Communication, Scientific Thinking, Training, Leadership, Presentation

Professional Experience

Postdoctoral Researcher — **May 2023 — Present**
University of California, Davis — *Davis, CA*

- Performed analyses of bulk and single-cell RNA sequencing data using DESeq2, Seurat, etc.
- Developed a computational cluster detection assay using image analysis in Python/MATLAB.
- Trained 8 technicians and students in both wet (microscopy) and dry (programming) lab techniques.

Quantitative Cell Science Intern — **June 2022 – August 2022**
Chan Zuckerberg Biohub — *San Francisco, CA*

- Implemented a Python pipeline for spectral unmixing in confocal microscopy images.
- Developed a spectral model to simulate light paths during fluorescence imaging.
- Configured microscope for multi-camera acquisition leading to a 2x increase in throughput.

Graduate Student Researcher — **August 2017 – May 2023**
University of California, Davis — *Davis, CA*

- Analyzed oncogenic signaling effects on cell behavior using high-throughput microscopy.
- Automated cell segmentation and tracking using image processing in MATLAB.
- Implemented a wet-lab and computational pipeline for multiplexed immunofluorescence.
- Employed systems biology to model MAP Kinase signaling and gene expression.

Undergraduate Researcher — **July 2015 – June 2016**
University of California, Davis — *Davis, CA*

- Completed independent senior research project quantifying tissue thickness in sea anemones.

Education

Doctor of Philosophy: Biochemistry, Molecular, Cellular, & Developemental Biology — *University of California, Davis*
Bachelor of Science: Cell Biology — *University of California, Davis*

Publications (*First author)

1. *Deciphering the History of ERK Activity from Fixed-Cell Immunofluorescence Measurements (submitted 2023)
2. *A Guide to ERK Dynamics, part 1: mechanisms and models ***Biochemical Journal* 2023**
3. *A Guide to ERK Dynamics, part 2: downstream decoding ***Biochemical Journal* 2023**
4. Live-Cell Sender-Receiver Co-cultures for Quantitative Measurement of Paracrine Signaling Dynamics, Gene Expression, and Drug Response. ***Methods Mol. Biol.* 2023**
5. *ERK signaling dynamics: Lights, camera, transduction. ***Developmental Cell* 2022**
6. Entosis is induced by ultraviolet radiation. ***iScience* 2021**
7. Systems-Level Properties of EGFR-RAS-ERK Signaling Amplify Local Signals to Generate Dynamic Gene Expression Heterogeneity. ***Cell Systems* 2020**

Awards

National Institutes of Health T32 Training Award — 2019
National Institutes of Health IMSD Fellow — 2018
UC Davis BMCDB Graduate Group Fellowship — 2017
Dean's List UC Davis College of Biological Sciences — 2013, 2014
UC Davis Cal Aggie Alumni **Leadership Award** — 2012