Chandrashekar KA

Postdoctoral Researcher

09 January 1991

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About me

I used to be a PhD student in the Computational Biology group at the Institute of Mathematical Sciences, Chennai, India. I am currently a postdoctoral researcher at Extavour lab at Harvard.

Skills

Python

Matlab

Julia

C

JS

(*)[The skill scale is from 0 (Fundamental Awareness) to 6 (Expert).]

Interests

The processes that turn an embryo to an adult, evolution of eukaryotic cell and multicellularity are the broad topics that fascinate me. For my PhD, I focused on understanding mechanisms that give rise to spatiotemporal patters during embryonic development. In the past I have worked on modeling contagion spread on networks, large scale analysis of NYSE stock prices, among other things.

Education

2015-2021 Doctor of Philosophy — The Institute of Mathematical Sciences
Contact-mediated signaling in developmental pattern formation

2008-2013 M.Sc.(integrated) — University of Mysore, Mysore
Majoring in Physics

2006-2008 Pre-University College — SDM College,Ujire
Physics, Chemistry, Mathematics, Biology

Publications

2021 Chandrashekar Kuyyamudi, Shakti N. Menon and Sitabhra Sinha."Contact-mediated cellular communication supplements positional information to regulate spatial patterning during development",Physical Review E, 103(6), 062409.

2021 Chandrashekar Kuyyamudi, Shakti N. Menon, Fernando Casares and Sitabhra Sinha. "Disorder in cellular packing can alter proliferation dynamics to regulate growth", Physical Review E, 104(5), L052401.

2021 Chandrashekar Kuyyamudi, Shakti N. Menon and Sitabhra Sinha. "Morphogen-regulated contact-mediated signaling between cells can drive the transitions underlying body segmentation in vertebrates", Physical Biology, 016001.

2019 Chandrashekar Kuyyamudi, Anindya S. Chakrabarti and Sitabhra Sinha. "Emergence of frustration signals systemic risk", Physical Review E 99.5 (2019): 052306.

2021 Chandrashekar Kuyyamudi, Shakti N. Menon and Sitabhra Sinha."Precision of morphogen-driven tissue patterning during development is enhanced through contact-mediated cellular interactions", arXiv preprint arXiv:2110.12927

2022 Chandrashekar Kuyyamudi, Shakti N. Menon and Sitabhra Sinha."Contact-mediated signaling enables disorder-driven transitions in cellular assemblies", arXiv preprint arXiv:2201.06478

2014 Vishavkarma Renu, Swetavalli Raghavan, Chandrashekar Kuyyamudi, Abhijit Majumder, Jyotsna Dhawan, and Pramod A. Pullarkat. "Role ofactin filaments in correlating nuclear shape and cell spreading", PLoS ONE 9(9): e107895

2016 Jesan Tharmaraj, Chandrashekar Kuyyamudi, and Sitabhra Sinha. "Modularity promotes epidemic recurrence", arXiv preprint arXiv:1611.02412

Schools and Conferences

2015 Winter School on Quantitative Systems Biology
ICTS, Bangalore, India

2016 Winter School on Quantitative Systems Biology
ICTP, Trieste, Italy

2016 Second Bangalore School on Population Genetics and Evolution
ICTS, Bangalore, India

2016 Games, Epidemics and Behavior
ICTS, Bangalore, India

2017 Spring College on the Physics of Complex Systems
ICTP, Trieste, Italy

2019 Ninth Bangalore Benny Shilo Course on Developmental Biology
NCBS, Bangalore, India

2019 Winter School on Quantitative Systems Biology
ICTS, Bangalore, India

2021 Thirsting for Theoretical Biology
ICTS-TIFR, India (Online)

2021 Neuromatch Academy Deep Learning Course
Aug 2-20 (Online)

Talks and Presentations

2013 Econophysics Conference — Talk on analysis of historical NYSE stock data
SINP, Kolkata

2014 Dynamics days asia-pacific — Presentation on structural balance in gene regulatory networks
IMSc-IITM, Chennai

2015 COMSNETS,IEEE — Talk on contagion spread on networks
Bangalore, India

2015 Winter School on Quantitative Systems Biology — Talk on persister cells
ICTS, Bangalore, India

2019 Winter School on Quantitative Systems Biology — Presentation on the role of juxtacrine signalling on fate boundary formation
ICTS, Bangalore, India