

Publications

- 1) Y.V. Venkatesh, B.S. Venkatesh, A. Jaya Kumar, "Stereodisparity estimation using a supervised neural network", Machine Learning for Signal Processing, *Proceedings of the 2004 14th IEEE Signal Processing Society Workshop*, Brazil 2004, Sept. 29 - Oct. 1 Page(s): 785 – 793.
- 2) Y. V. Venkatesh, S. Kumar Raja, A. Jaya Kumar, "On the application of a modified self-organizing neural network to estimate stereo disparity", *IEEE Transactions on Image Processing* 16(11): 2822-2829 (2007).
- 3) A. Anitha, A. Jaya Kumar, R. Mascarenhas, A. Husain, "Laser Guided Automated Calibrating System for Accurate Bracket Placement", *Annals of Medical and Health Sciences Research*, 2015 Jan-Feb; 5(1): 42-44.
- 4) A. Jaya Kumar, Y. Hatwalne, M. Muthukumar, "Stability of the sectorized morphology of polymer crystallites", *Phys. Rev. E* 94, 032506, Sept 2016.
- 5) A. Jaya Kumar, B. Chakrabarti, Y. Hatwalne, "Elasticity of smectic liquid crystals with in-plane orientational order and dispersion asymmetry", *Phys. Rev. E* 95, 022701, Feb 2017.
- 6) A. Jaya Kumar, B. Chakrabarti, Y. Hatwalne, "Equilibrium of fluid membranes endowed with orientational order", *Phys. Rev. E* 95, 042806, Apr 2017.
- 7) A. Jaya Kumar, Rahul Pandit, "Science and Engineering Research in India (1985-2016): insights from two scientometric databases", *Current Science* 115(3), Aug 2018.

In preparation:

- 8) A. Jaya Kumar, Y. Hatwalne, "Classification of crystal structures and topological defects in graphene nanotori and fullerenes with high genus".
- 9) M. Mahesh Kumar, A. Jaya Kumar, Rahul Pandit, "Deep-learning assisted detection and termination of spiral and broken spiral waves in mathematical models for cardiac tissue".
- 10) A. Jaya Kumar, Akhilesh Verma, Jeremie Bec, Rahul Pandit "Path-planning smart swimmers in turbulent flows".
- 11) A. Jaya Kumar, Akhilesh Verma, Jeremie Bec, Rahul Pandit "Adversarial reinforcement learning for gravitaxis in turbulent flows".
- 12) A. Jaya Kumar, Y. Hatwalne, Rahul Pandit "Phases, morphologies, and transitions in a mathematical Model for the endoplasmic reticulum".
- 13) Sai Chand, A. Jaya Kumar, Y. Hatwalne "On the stability of line-defects in nematic order on fixed Topographies".

Thesis:

- 14) **PhD:** Interplay between shape, order and topological defects: Elasticity of some soft condensed matter systems (2015).
- 15) **MSc:** Novel application of supervised and self organized neural network for stereo disparity estimation (2005).