Sankaran Vaidyanathan

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sankaranv.github.io

Research Experience

Jul 2017–Jun 2019 **Project Associate**, *Robert Bosch Centre for Data Science and Artificial Intelligence, IIT Madras*

Extended modularity maximization methods for clustering on hypergraphs, and developed a method for improving clustering quality by iteratively balancing hyperedge cuts. Advised by Prof. Balaraman Ravindran, IITM and Prof. Srinivasan Parthasarathy, The Ohio State University.

Jun–Aug 2016 **Research Intern**, *RISE-IIL Lab, Department of CSE, IIT Madras*

Worked on extending self-organizing maps for deep end-to-end clustering.
Advised by Prof. Balaraman Ravindran.

Education

2019–present **M.S., Computer Science**, *University of Massachusetts Amherst*

2013–2017 **B.E., Electrical and Electronics Engineering**, *SSN College of Engineering, Anna University*

- **Thesis Project**: *Control of Autonomous Quadrotor for Real-Time Object Tracking*
  Built an APM2.6 based quadrotor that tracked and followed objects selected from a PC interface. Implemented Lucas-Kanade optical flow and Kalman filter based video stabilization.
- **Awards**: SSN Merit Scholarship 2014, awarded to the top 5 ranks for the first year.

Teaching Experience

Jan–May 2019 **Teaching Assistant, Machine Learning**, *Certification in Technology and Management, IIT Madras and IIM Bangalore*

An online course run by Prof. Balaraman Ravindran. Developed interactive iPython demos with narration, and set programming assignments and exams.

Publications and Manuscripts

arXiv **Hypergraph Clustering: A Modularity Maximization Approach**

Tarun Kumar*, **Sankaran Vaidyanathan***, Harini Ananthapadmanabhan, Srinivasan Parthasarathy, Balaraman Ravindran

Poster Presentations

Nov 2017 **Role Discovery in Graphs Using Global Features: Algorithms, Applications and a Novel Evaluation Strategy**, *RBCDSAI Workshop on Recent Progress in Data Science and AI*

Relevant Coursework

- CS7015: Deep Learning, IIT Madras
- CS6730: Probabilistic Graphical Models, IIT Madras
- CS6015: Linear Algebra and Random Processes, IIT Madras

Technical Skills

- **Programming Languages**: Python, C++
- **Frameworks**: TensorFlow, sklearn, OpenCV, OpenGL, Processing
- **Tools and Platforms**: LaTeX, Linux, Kubernetes, Arduino

Extracurricular Activities

- Scriptwriter for Lights Out Please, SSN's theatre group.
  Wrote a 90-minute original play staged at Alliance Française of Madras.
- SSN's *Teach-a-School* initiative: volunteered to teach basic math and English to children from underprivileged backgrounds in government schools.