

## EDUCATION

PROGRAM	INSTITUTION	GPA	YEAR	RANK
M.S. & Ph.D. - Computational Science, Engineering & Mathematics	The University of Texas at Austin	3.76/4	2022	-
B.Tech (Hons) & M.Tech - Chemical Eng.	Indian Institute of Technology Madras	8.94/10	2017	2

## PROFESSIONAL EXPERIENCE

- **Graduate Research Assistant, UT Austin** *Ph.D. Thesis: ML methods for network community detection* Jun 2018+
  - Developed **Super.Complex** - Auto-ML pipeline (99% accuracy). Formulating **deep RL algo** for NP-hard **subgraph search**.
- **Applied Scientist II Intern, Amazon (Last Mile Science)** *Project: Route Planning* Jun - Aug 2021
  - Accurately estimated delivery route productivity with AutoML & detected road network communities for many use-cases.
- **Applied Scientist II Intern, Amazon (Brands Experience)** *Project: Substitute Product Recommender* Jun - Aug 2020
  - Built product embedding space based on catalog text info & performed nearest neighbor search for substitutes (99% Recall).
- **Cloud Software Engineering Intern, Schlumberger** *Project: Time-Series Operations* Jun - Aug 2019
  - Deployed on Google Cloud - a Domain Specific Language in Scala, for custom calculations with real time-series data.
- **Ph.D., IITM** *Master's Thesis: Human bio-chemical reaction network analysis for treating autism* [Paper] 2016-17
  - Developed constrained pareto-optimization algorithms and metrics for optimal reaction network flow distribution.

## SELECT CONFERENCES (GOOGLE SCHOLAR)

- **Talk, "Intelligent subgraph search for communities with deep reinforcement learning", SIAM MDS** (2020)
- **Talk, "Super.Complex: An ML pipeline for community detection in networks", TACCSTER Symposium** (2019)

## SKILLS

- **Coding:** Python (scikit-learn, nltk, networkx, pandas, pyspark, faiss), C++ (MASA, PETSc), R (tidyverse), Matlab (Statistics & ML, Optimization, ODE Solvers), Scala, Latex, Linux & HPC (at TACC), Github. **Exposure:** autotools, C, Java, C#, Arduino
- **Courses:** Reinforcement Learning, Bayesian Deep Learning, Pattern Recognition, Graph Theory, Stat. Models for Big Data

## RESEARCH PROJECTS (ML, HPC & OPTIMIZATION)

- **Hyperspectral image denoising & classification** (*Statistical Methods in Scientific Computing*) Mar-May 2018
  - Applied a framework with one-against-one and one-against-all SVMs for multi-class classification with 90% accuracy.
- **2D Heat eqn. finite difference: solver application in C++** (*Tools in computational science*) Aug-Dec 2018
  - Features: Performance - 0.4s (100x100 mesh), tests (bats, Travis CI & Docker), 100% code coverage (lcov), storage (HDF5).
- **Kinetic modeling of anti-cancer drug action** [Paper] (*Mathematical Biology*) Jul 2016-May 2017
  - Simulated experimental circadian rhythms with a robust data-tuned parametric model using a genetic algorithm.
- **Implementation of ML algorithms for image & speech data classification** (*Pattern Recognition*) Aug-Dec 2016
  - Experimented with neural networks (MLP), GMM, HMM, Bayes, k-means and k-nn classifiers.

## CO-CURRICULAR ACTIVITIES

- **Founder, Literary Fest 'Saahitya'** (*a self-driven initiative, organized by the Director, Dean & Alumni*) (Feb - Apr 2016)
  - Formed & lead a team of 60 across 6 divisions to organize the fest with 30 events, with a footfall of over 1000 in IITM.

VR	Designed <b>spatial augmented reality</b> at Envisage, India's largest student tech show ( <b>2000+ people</b> )
Coding	<b>Windows App(C#): Wardrobe Assistant - design suggestions</b> 2016 Microsoft-24hr Code.Fun.Do Hackathon
Robotics	Coded locomotion for <b>autonomous transwheel robot</b> 2013 Asia-Pacific Robot Contest (Robocon)

## AWARDS & HONORS

- **Prime Professional Development Award** recipient, best poster award at **SIAM TX-LA Conference**. 2018-20
- **O'Donnell Fellowship & General ISSS Financial Aid Award** by UT Austin towards research. 2017-19
- **KVPY Fellowship** (Dept. of Science & Technology, India) & **C.A. Sastri Endowment Award** (IITM) 2012-17