

## 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 (98% accuracy). Formulating **deep RL algo** for NP-hard subgraph search.
- **Applied Scientist II Intern, Amazon** *Project: Substitute Product Recommender* Jun - Aug 2020
  - Built product embedding space based on catalog text info & performed nearest neighbor search for substitutes (**0.99 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**.
- **GRA, IITM** *Master's Thesis: Human bio-chemical reaction network analysis for treating autism [Paper]* 2016-17
  - Developed **2 constrained pareto-optimization algorithms** and **2 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
  - Coded from scratch and compared- **neural networks (MLP)**, **GMM**, **HMM**, **Bayes**, **k-means** and **k-nn classifiers**.
- **Design of microfluidic networks performing floating point operations** (*Systems & Control*) Jul 2015-Jun 2016
  - Employed **genetic algorithms**, **MINLP** to design optimal micro-fluidic networks for **combinatorial sequence sorting**.

## CO-CURRICULAR ACTIVITIES

- **Founder, Literary Fest 'Saahitya'** (*a self-driven initiative, commended 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- dress suggestions</b> 2016 <i>Microsoft-24hr Code.Fun.Do Hackathon</i>
Robotics	Coded locomotion for <b>autonomous transwheel robot</b> 2013 <i>Asia-Pacific Robot Contest (Robocon)</i>

## AWARDS & HONORS

- **2-time Professional Development Award** recipient, best **poster** awardee 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