Meghana Venkata Palukuri
+1 512-203-2675 https://meghanapalukuri.github.io/ meghana.palukuri@utexas.edu

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

- **Applied Scientist, Amazon (Last Mile Science)** *Project: Road network communities* Aug 2022+
  - Built road network communities as a **new geospatial planning unit** for many applications using graph algorithms.
- **Graduate Research Assistant, UT Austin** *Ph.D. Thesis: ML methods - network community detection* **[Paper]** 2018-22
  - Developed **Super.Complex**, an **Auto-ML pipeline** with **98% accuracy**, and a **fast RL method** for **NP-hard subgraph search**.
- **Applied Scientist Intern, Amazon (Last Mile Science)** *Project: Route Planning* Jun - Aug 2021
  - Accurately **forecasted productivity** of delivery routes using **AutoML**, and **selected features** to influence for improvements.
- **Applied Scientist Intern, Amazon (Brands Experience)** *Project: Substitute Product Recommender* Jun - Aug 2020
  - Built **product embeddings** using catalog **text** and performed **fast neighbor search** for substitute products with **99%** Recall.
- **Cloud Software Engineering Intern, Schlumberger** *Project: Time-Series Operations* Jun - Aug 2019
  - Developed a **Domain Specific Language** in **Scala** for custom calculations on **real-world time series data** on **Google Cloud**.
- **Graduate Assistant, IITM** *Master's Thesis: Human bio-chemical reaction network analysis in autism* **[Paper]** 2016-17
  - Developed **two pareto-optimization algorithms** and **two metrics** for optimal reaction **network flow distribution**.

Publications & Conferences

- 6 papers including 3 peer-reviewed journal papers, 8 conferences, with 19 citations and h-index 3. [**Google Scholar**]
- **5min Talk:** "**Super.Complex**: **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**. **Exposure:** C, Java, C#, Docker, autotools, CI, lcov. **[Github]**
- **Courses:** RL, Bayesian Deep Learning, Pattern Recognition, Graph Theory and ML, Statistical Models for Big Data, NLP

Research Projects

- **AutoML image clustering with similarity graph embeddings [Code]** *(DL, CV & Graph ML)* Jan-May 2022
  - **Combined image and similarity graph embeddings** of 2D projections and clustered them into 3D objects (**97% accuracy**).
- **Hyperspectral image denoising & classification [Code]** *(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**.
- **Implementation of ML algorithms for image & speech classification [Code]** *(Pattern Recognition)* Aug-Dec 2016
  - Built **neural networks, GMM, HMM, Bayes, k-means and k-nn classifiers** for speaker identification and image recognition.

Co-curricular Activities

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

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

Awards & Honors

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