

# APAAR SHANKER

Ph.D. Candidate, College of Computing, Georgia Tech

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<https://github.com/auag92>

in <https://www.linkedin.com/in/ashanker314>

## INTERNSHIPS

Quantitative Strategies Summer Associate

Bank of America Merrill Lynch, Equities Electronic Execution

June 2019 – Aug 2019

New York City, New York

Research Associate

National Institute of Standards and Technology

May 2018 – July 2018

Gaithersburg, MD

## PROJECTS

Python Library for Materials Knowledge Discovery (PyMKS)

National Institute of Standards and Technology

May 2017 – Ongoing

Gaithersburg, MD

- <https://github.com/auag92/pymks>
- Worked on the development of an open source python software, currently available on conda-forge.
- Implemented novel analytics algorithms in functional and distributed form using PyToolz and Dask, to leverage multicore and multithread capabilities of modern processors.
- Wrapped the implementation in scikit-learn API

Discovering Equations using Convolutional Neural Networks

Georgia Tech, National Institute of Standards and Technology

Jan 2017 – ongoing

Atlanta, GA

- Developing a CNN model using PyTorch, with constrained and free filters to learn the Partial Differential Equations underlying simulation of natural phenomenon.

High Throughput Analytics of Molecular Datasets

Georgia Tech, National Science Foundation

Sep 2016 – ongoing

Atlanta, GA

- Development of computer vision based feature generation and visualization workflows for nanoporous macromolecules.
- Deep learning based predictive linkages for high throughput selection of optimal materials for desired performance attributes.

High Performance Multi-Physics P.D.E Solver

Indian Institute of Science

Sep 2014 – May 2016

Bangalore, India

- [https://github.com/auag92/lattice\\_boltzmann\\_phase\\_field](https://github.com/auag92/lattice_boltzmann_phase_field)
- Developed a fully parallelized, finite difference, multiphysics solver in C using MPI to simulate alloy solidification in presence of fluid flow on an HPC cluster.

Accelerating Database Management System

Georgia Tech

Sep 2018 – Aug 2019

Atlanta, GA

- An automated query caching system in C++ to accelerate exploratory queries in a relational database.

## EDUCATION

P.h.D. Candidate (Machine Learning),  
College of Computing

Georgia Institute of Technology

Aug 2016 – Dec 2020

Master of Science

Indian Institute of Science, Bangalore

Aug 2015-June 2016 First Class

Bachelor of Science

Indian Institute of Science, Bangalore

Aug 2011-June 2015 First Class

## SKILLS & STRENGTHS

OS: Linux, Intermediate Systems Knowledge

Languages: Python, C, C++, Bash, MATLAB

Tools: scikit-learn, numpy, scipy, pandas

Dask, Pytoolz, PyTorch, TensorFlow

## HONORS



J. N. Tata Endowment Scholarship for  
Higher Education Awarded in 2016



INSPIRE Scholarship  
Awarded by Dept. of Science and Tech.,  
Govt. of India, 2011-2016

## EXTRACURRICULARS



Senator, Georgia Tech Student  
Government Association



Chief-Coordinator, Sponsorship and  
Outreach, IISc Techno-Cultural Fest

## CONFERENCES

CHIMAD, Phasefield V

Northwestern University

Aug 2017, Conducted tutorial

MLSE 2018

Carnegie Mellon University

June 2018, Presented poster