# APAAR SHANKER

**College of Computing, Georgia Tech**

@ ashanker9@gatech.edu  📞 404-955-2251  📍 Atlanta, GA  in https://www.linkedin.com/in/ashanker314

○ https://github.com/auag92

## RESEARCH STATEMENT

*Automating and Accelerating Knowledge Discovery using AI*

## 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

### High Throughput Analytics of Molecular Datasets
**Georgia Institute of Technology**

📅 Sep 2016 – ongoing  📍 Atlanta

- Project funded by National Science Foundation
- 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.

### Discovering Equations using Deep Neural Networks
**NIST, Georgia Institute of Technology**

📅 Jan 2017 – ongoing  📍 Georgia Tech, Atlanta

- Working on a DNN model using tensorflow and keras, with constrained and free filters to learn the Partial Differential Equations governing material transformation and mechanical properties.

### 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
- 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.

### Course Projects
**Georgia Tech**

📅 Aug 2016 – ongoing  📍 Atlanta

- A Q-Learning based AI agent to execute stock trading.
- A neural net model for predicting minimum energy surface for copper crystal.

## EDUCATION

### P.h.D. in Computational Science and Engineering
**Georgia Institute of Technology**

📅 Aug 2016 – ongoing

### 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++

tools: scikit-learn, numpy, scipy, pandas

Dask, Pytoolz, Keras, TensorFlow

## CURRICULARS

🏆 **J. N. Tata Endowment Scholarship for Higer Education Awarded in 2016**

🏆 **INSPIRE Scholarship**
Awared by Dept. of Science and Tech., Govt. of India, 2011-2016

## EXTRACURRICULARS

🏆 **Senator, Georgia Tech Student Government Association**

🏆 **Executive Team Member, Event Commite at Georgia Tech SGA**

## CONFERENCES

### CHIMAD, Phasefield V
**Northwestern University**

📅 Aug 2017

### MLSE 2018
**Carnegie Mellon University**

📅 June 2018