

# MOHIT ISRANI

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## EDUCATION

Master of Science in Computer Science

May 2018

Master of Science in Materials Science

University of Florida, Gainesville, GPA: 3.8 / 4

Bachelor of Technology in Metallurgical and Materials Engineering

May 2015

National Institute of Technology (VNIT), Nagpur, India, GPA: 8 / 10

## TECHNICAL SKILLS

**Programming Languages** Java • Elixir(Erlang) • Python • C/C++ • JavaScript • HTML/CSS • SQL

**Computational Technologies** R • MATLAB • Open-MPI • VIM • Git • VASP • VESTA

**Relevant Coursework** Algorithm Analysis, Data Science & Mining, Distributed Systems, High Performance Computing, Database Management Systems, Statistical Methods in Research I and II, Computer Network.

## WORK EXPERIENCE

**Graduate Student Assistant** | Advisor: Dr. Richard Hennig | Python, MATLAB, VASP(DFT), VESTA

Apr 2016 – May 2018

Density Functional Theory(DFT) Prediction and Characterization of 2D Chalcogenides

- Streamlined high-throughput DFT calculations by automating on python for materials analysis.
- Discovered novel 2D structures by performing DFT calculations using Hybrid exchange-correlation functional.
- Generated plots, charts and other data representation schemes using Matplotlib, a Python 2D plotting library.

## PROJECTS

**Road Safety Data Analysis (Ruby on Rails, Oracle DB, HTML, Chart JS, Python-Data Cleaning)**

Jan 2018 – Apr 2018

- Developed a full stack interactive application for analyzing road safety data published by UK government.
- Utilizing 300,000 records of major and minor accidents to help users and authorities make better decisions on road safety and publish data for public.

**Age-Invariant Face Recognition (Python)**

Nov 2017 – Dec 2017

- Created binary classifiers, linear, k-nearest neighbors, neural network and support vector machine (SVM) classifiers to predict whether two given age invariant images belong to the same person or not.
- Produced LBP (Local Binary Pattern) and HOG (Histogram of Oriented Gradients) features on extraction from Cross-Age Celebrity Dataset (CACD) that was used to generate the classifier models.

**Pastry Protocol Implementation using Functional Language (ELIXIR)**

Oct 2017 – Oct 2017

- Implemented a distributed object location and logarithmic efficiency routing substrate for peer-to-peer applications.
- Introduced global routing using distributed hash tables based on key matching on an overlay network of nodes (10,000).
- Handled pastry failure as well; works even on a connection failure of up to 80% of nodes.

**Bitcoin Mining using ELIXIR**

Aug 2017 – Sep 2017

- Generated Bitcoins by mining with Actor model concept. Used SHA-256 as hashing function for bitcoin mining.
- Gained efficiency by distributing work from server computer to multiple clients (computers) upon request.
- Every client, in turn, accelerated mining by dividing and allocating work to several worker threads.

**Internet chat room application implementation (JAVA)**

Nov 2016 – Dec2016

- Delivered a multi-user chat application using multithreading and socket programming.
- Improved functionality by providing users with options to unicast, broadcast, block-cast texts and files via the server.

**Performance Comparison of Parallelized Algorithms (C, Open-MPI)**

Nov 2016 – Dec 2016

- Maximized processing speed by systematically distributing a pool of 10 million records on multiple processors.
- Achieved parallel programming using Open-MPI to execute instruction simultaneously on processors.

## ACHIEVEMENTS / LEADERSHIP

**Certificate in Scientific Computing (Awarded by University of Florida)**

Aug 2017

- Successfully Completed the prescribed course of study.

**Part of Institute for Pure and Applied Mathematics(IPAM), UCLA Workshop 2017**

Oct 2017

- A week-long discussions and seminars on Optimization & Optimal Control for Complex Energy and Property Landscapes.

**Event Director of Indian Graduate Student Association (IGSA) at University of Florida (UF)**

Feb 2017

- Planned and organized cultural, social events and conventions throughout the year
- Expanded medium of networking for graduate students and alumni.

**Poster Presentation at the International Conference, Electronic Materials and Applications (EMA) 2017**

Feb 2017

- On "DFT Prediction and Characterization of Two-Dimensional Group-III Chalcogenides.