# Mohit Israni

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Graduate Student at University of Florida

## EDUCATIONAL BACKGROUND

**University of Florida**, Gainesville, FL — May 2018
- MS in Computer & Information Science & Engineering — **3.82 / 4.0**
- MS in (Concurrent) Materials Science and Engineering — **3.82 / 4.0**
- Graduate Certificate in Scientific Computing — **4.0 / 4.0**

**National Institute of Technology (VNIT),** Nagpur, India — May 2015
- B-Tech in Metallurgical and Materials Engineering — **8 / 10**

## SKILLS AND COURSEWORK

**Coursework** — Algorithm Analysis · Data Science & Mining · Distributed Systems · High Performance Computing · Database Management Systems · Statistical Methods in Research I and II · Computer Networks

**Programming Languages** — Java(Intermediate) · Elixir(Experienced) · Python(Experienced) · C/C++ · JavaScript · HTML/CSS · SQL

**Computational Technologies** — VASP · VESTA · Open-MPI · VIM · Git · R Language · MATLAB

## PROJECTS & RESEARCH EXPERIENCE

**Predict Closed Questions on StackOverflow (Python) | UF CAP5771** — Nov 2017 – Dec 2017
- Analyzed multiple data science classifiers to predict whether a question posted by a user on Stack Overflow will be closed given the question as-submitted, along with the reason that the question was closed.
- Preprocessed 4 million records to remodel the as-given features to traits of users and topical features of the questions.
- Evaluated the goodness of classifier models using the multiclass logarithmic loss function, accuracy, and confusion matrix.

**Age-Invariant Face Recognition (Python) | UF CIS6930** — 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.
- Extracted LBP (Local Binary Pattern) and HOG (Histogram of Oriented Gradients) features from the Cross-Age Celebrity Dataset (CACD) that was used to build the classifier models.

**Pastry Protocol Implementation using Functional Language (ELIXIR) | UF COP5615 |120/100** — Oct 2017 – Oct 2017
- Implemented a distributed object location and logarithmic efficiency routing substrate for peer-to-peer applications.
- Global storage/routing used distributed hash tables based on key matching in a potentially very large overlay network of nodes (10,000).
- Also, implemented pastry failure handling; works even on a connection failure of up to 80% of nodes.
- SIMILAR PROJECT: Gossip Simulator on a Distributed Network (ELIXIR) | UF COP5615 | 130/100

**Bitcoin Mining using (ELIXIR) | UF COP5615 |100/100** — Aug 2017 – Sep 2017
- Implemented Bitcoin miner using Actor model concept. Used SHA-256 as hashing function for bitcoin mining.
- Distributed work from server computer to multiple clients (computers) upon request.
- Every client, in turn, divides and allocates work to several workers (threads) to generate as many bitcoins as possible.

**Internet chat room application implementation (JAVA) | UF CNT5106C** — Nov 2016 – Dec2016
- Built a multi-user chat application using multithreading and socket programming.
- Availed users with options to unicast, broadcast, block-cast texts and files to other users via the server

**Performance Comparison of Parallelized Algorithms (C, Open-MPI) | UF CIS6930** — Nov 2016 – Dec 2016
- Enhanced processing speed by systematically distributing a pool of 10 million numbers of data among user defined number of processors on University Supercomputer (HiperGator2).
- Implemented parallel programming using Open-MPI to execute instruction simultaneously on processors to analyze performance variance for parallel quick, merge and radix sort algorithms.

**Density Functional Theory(DFT) Prediction and Characterization of 2D Chalcogenides** — Apr 2016 – Present

Research | Advisor: Dr. Richard Hennig | VASP(DFT), VESTA, Python, MATLAB
- Automated high-throughput DFT calculations using Pymatgen, an open-source Python library for materials analysis.
- Discovered novel 2D structures by performing DFT calculations using Hybrid exchange-correlation functional.
- Used Matplotlib, a Python 2D plotting library, for plotting, charting and data representation.

## POSTER PRESENTATIONS / LEADERSHIP

**Part of Institute for Pure and Applied Mathematics(IPAM), UCLA Workshop 2017** — Oct 2017 – Oct 2017
- A week-long discussions and seminars on Optimization & Optimal Control for Complex Energy and Property Landscapes.

**Poster Presentation at the International Conference, Electronic Materials and Applications (EMA) 2017** — Feb 2017 – Feb 2017
- On "DFT Prediction and Characterization of Two-Dimensional Group-III Chalcogenides."

**Event Director of Indian Graduate Student Association (IGSA) at University of Florida (UF)** — Jan 2016 – Feb 2017
- Planned and organized cultural, social events and conventions throughout the year and served as a medium for networking with other graduate students and alumni.