# Nikhil Garg

CONTACT
INFORMATION

Third Year Undergraduate Student
Indian Institute of Technology Madi
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EDUCATION

**Indian Institute of Technology Mandi**, India
*B.Tech in Computer Science and Engineering*                  August 2012 – present

- Cumulative Grade Point Average: **8.2**
- Expected graduation date: **June 2016**

**Bal Niketan Model School**, Chandigarh, India
*Senior Secondary(C.B.S.E.)*                                                         2012

- Cumulative Average: **89%**

**The British Co-Ed High School**, Patiala, India
*Secondary(I.C.S.E.)*                                                                   2010

- Cumulative Average: **92.4%**

UNDERGRADUATE
THESIS

**Enhanced Index Tracking**

*Supervisor: Prof. Manoj Thakur, IIT Mandi*                        (August, 2015 – present)

Index tracking consists of reproducing the performance of a stock-market index by investing in a subset of the stocks included in the index. All the code for this project is being written in R.

- The major problem in the project to be tackled is selecting k stocks out of available n stocks.
- The **combinatorial problem** of identifying the assets is solved by heuristic algorithm.
- Also, the **desired return and risk** are to taken care of while selecting the stocks.
- Developing a **back testing framework** to check the portfolio performance.
- Developed a framework which predicts the possibilities of the **future data**.

INTERNSHIPS AND
PROJECTS

**Aadhaar Card OAuth Server**

*Khosla Labs*                                                          (Dec, 2014 – Feb, 2015)

Developed a server which provided **Sign-in with Aadhaar Card** service. Developed this product using Python, Django Web-framework, and Twitter - Bootstrap.

- Implemented the protocols of **OAuth2.0**.
- Retrieved the data from the Aadhaar database, using **OTP** and/or **Biometrics**.
- Stored the retrieved data in a local database.
- Can be used for **identity verification** and thus can help reduce a lot of frauds.

**Price Comparison Engine**

*Healthkart.com(Bright Lifecare Pvt Ltd)*                         (June, 2014 – Aug, 2014)

Built an **automated system**, which on fed with css selectors of attributes, **crawls** the websites, **extracts** the information and **compares the prices** of similar products on different e-commerce websites. Developed this project using Python, Django Web-framework, Selenium Webdriver, MySQL, CSS and HTML.

- **Tokenised** the sentence and **matched** the words for identifying the similar products.
- Had also used **M.R.P. range** as a parameter.
- Achieved a high **accuracy of 90%** of matching the products.

COURSE
PROJECTS

**Globalone**                                           *Information And Database Systems*

Built an **interactive organized photo base**, which had features like upload images, **buy/sell images**, **tag based autocomplete search**, like or dislike, **paginated feeds**. Developed this app using Django web-framework, MySQL, HTML5, BootStrap CSS, AJAX. Won the **first prize** out of **15 teams**, for this project.

**Course Registration Portal**                                              *Database Practicum*

Devised an app for **online add/drop courses**, **grading**, a panel for teachers for **regulating the course** and automatically generating the **student ID card**. Used PHP, MySQL, CSS/HTML, JavaScript and AJAX to develop this app.

**Intelligent Railway Crossing**                                                 *Design Practicum*

Developed a working prototype which **closed the gates** of the railway crossing when a train is approached the crossing, **opened the gates** when the train has crossed the crossing, gave **visual and audio warning** before the closing of the gates to the people who are about to cross the railway line and also issued a warning if any **person is caught inside**. Used C, Arduino for this project.

TECHNICAL
SKILLS

**Languages**: C, C++, Python, PHP
**Web Development**: HTML, CSS, Javascript, Bootstrap
**Database Management**: MySQL
**Operating System**: Windows, Linux(Ubuntu), Mac
**Misc.**: Selenium webdriver, LATEX , Django web-framework, Bash scripting, Gnuplot, Matlab, R

POSITION OF
RESPONSIBILITY

**Coordinator, Programming Club, IIT Mandi**                      (Sep, 2013 –April, 2015)
Organized various Programming Club activities like conducting **programming competitions**, **tutorials**, etc. on a regular basis.

**Chair, ACM Student Chapter, IIT Mandi**                       (May, 2014 – April, 2015)
Served as the Chairperson of ACM Chapter, IIT Mandi which was preceeded by the roles of **Vice Chairperson and Treasurer** of ACM Chapter, IIT Mandi. Successfully organized many events such as **Distinguished Speaker Program**, **Ice-Cream talks**, etc.

**Member, Guidance And Counselling Services, IIT Mandi**          (May, 2013 – present)
GCS is a **voluntary service** aimed at helping the students to deal with the various problems at the college and the hostel. Served as a **mentor** for first year students and helped them getting acquainted with college studies and environment.

**Coordinator, Hiking And Trekking Club**                       (Sep, 2012 – April, 2013)
Managed the club which was responsible for organizing activities such as **hiking, trekking**, etc.

RELEVANT
COURSEWORK

**Computer Science:** Data Structures, Computation For Engineers, Computer Organization, Paradigms of Programming, Pattern Recognition, Formal Languages And Automata Theory, Information And Database Systems, Communicating Distributed Processes, Data Mining For Decision Making.

**Mathematics:** Real Analysis and Differential Equations, Discrete Mathematics, Linear Algebra, Probability and Random Processes, Computational Financial Modeling, Mathematics For Financial Engineering.

EXTRA
CURRICULARS

- Represented IIT Mandi in the **finals of Capture The Flag** event (**Build The Shield, 2015**) organized by **Microsoft India**.
- Social Service: Taught children of rural areas in an initiative by **Prayas**, IIT Mandi
- Represented school in **Inter School Quiz competition**, held in Patiala.