# TUSHAR MAKKAR

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| **Education** | **Bachelor of Technology, Computer Engineering** | May 2015 |

National Institute of Technology, Surathkal, Karnataka, India
CGPA : **9.36/10.0**, Department Rank: **5/107**

**All India Senior Secondary School Examination (C.B.S.E)**   July 2011
P.K.R. Jain Sr. Sec. Public School, Ambala, Haryana, India
Percentage Secured : **95.6%**, District Rank: **1**

**All India Secondary School Examination (C.B.S.E)**   July 2009
P.K.R. Jain Sr. Sec. Public School, Ambala, Haryana, India
Percentage Secured : **98%**, District Rank: **1**

**Experience**   **Senior Software Engineer (Data Science), Rivigo**   March 2017-Present
• *Pricing Engine*: Finds best route price for transporters and fleet owners to ensure better return load efficiencies and more business for fleet owners using machine learning models.
• *Demand Recommendation Engine*: Recommended users on the basis of their business potential and suggests serviceable load requests to those users.
• *Rating Engine*: Provided rating using 300+ data points, which are extracted on the basis of app usage, phone usage and platform business performance data.

**Software Development Engineer - 2, CodeNation**   June 2015-March 2017
• *Library Suggestion Engine*: Underwent through Trilogy University (TU'15). Developed tool which yields opportunities where a developer could have used an external library to make codebase more secure, simpler, reusable and easy to comprehend.

**Protocol Designer and ML Developer (Founding Engineer), Trestor**   Jan 2014-June 2015
• *Trest*: Developed and designed a new P2P cryptocurrency. Implemented network layer protocols, consensus algorithm and biometric authentication system.

**Software Engineering Intern/Researcher, Google**   May 2014-July 2014
• *Word Sense Disambiguation*: Worked in Ray Kurzweil's *Machine Intelligence Group*. Designed the algorithm for finding context of a word using Cooccurence based classifier and WordNet.

**Software Engineering Intern/Researcher, Algorithmic Insight**   May 2013-July 2013
• *Least Cost Fulfillment Algorithm*: Implementated and designed the algorithm for systemizing the order fulfillment process of The Supplies Group using Genetic algorithm based approach.

**Projects**   **Voluptuous**   April 2016
Voluptuous, despite the name, is an open-source Python data validation library. It is primarily intended for validating data coming into Python as JSON, YAML, etc.

**Patents**   **Library suggestion engine**   USPTO
Library suggestion engine yields library substitution opportunities using Machine Learning and NLP.

**Blackbox matching engine**   USPTO
Blackbox matching engine extracts code snippets, makes them compilable (using AST parsing and templatizing) and compares the results with the test cases extracted from library functions.

**Publications**   **Context aware searching of components in large repositories**   IEEE
Proposed a new approach to locate software components from large component online open source repositories faster encompassing the techniques like context-aware browsing, Hidden Markov Models based ranking and semantic tagging.

**Dirichlet Based Collaborative Intrusion Detection Systems**   Springer
Proposed a new approach for making Intrusion Detection System more robust using Dirichlet Distribution based collaborative trust model and Nash-Equilibrium.

**Awards**          **Competitive Programming**
- Ranked **3rd** among Indian teams in IEEEXtreeme-7.0.
- **All World Rank 15** in Instruo-2013 held at Codechef.
- Solved 300+ problems in Spoj. Handle : tusharmakkar08.
- Qualified for both ACM ICPC Amritapuri regionals and ACM ICPC Kharagpur regionals.

**Haryana Pratibha Samman Award**
- Recieved Haryana Pratibha Samman Award from Chief Minister of Haryana for securing **AIR - 3** in High School Examination.

**Performance in Olympiads/Hackathons/Competition**
- Winner of Hackathon Code.Fun.Do organised by Microsoft.
- **Top - 10** worldwide in IBM Smarter planet challenge.
- **AIR - 1** in Holy Faith's National Talent Search Exam.
- **AIR - 21** in National Science Olympiad.

**Others**
- *Convenor of Web Enthusiasts Club, an elite group of Computer Enthusiasts at NITK.*
- *Microsoft Student Partner and Joint Head of NITK Codechef Campus Chapter.*
- *Executive Member NITK IEEE Student Branch and Amateur Astronomers Club (previously SGC).*
- *Joint Convenor of Computer Committee in Engineer 2014, the technical fest of NITK.*
- *Teaching Volunteer at Teach For India, Make a Difference and Guru Nanak Sewa Sansthan.*