Mohit Saini

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Achievements

- **Yellow Labeled** Programmer at **codechef** ; **1st ranker** in ISCC2017 contest.
- Secured top 10 rank in coding competition among all programmers of IIT-Delhi, conducted by Facebook.
- Attained **619**th Rank in IIT JEE 2012 among 5 lakh participants.

Professional Experiences

Lead Data Scientist, upgrad.com *(Jun '17 - Present)*

- Developed NLP algorithms to detect similar/duplicate question on new question arrival at program's discussion forum. Saved 15% effort of human teaching assistant by answering those questions automatically.
- Developed Regression model to predict the revenue for upcoming week to set a benchmark on sales team.
- **Developed r2py tool** to convert R language code into python syntax code.

Head of Software Development, wiseHQ.com (Freelancing, 6 month contract) *(Nov '16 - Jun '17)*

Tools for Business Analytics using ML and AI

- Led a small team to implement customer behaviour learning model, using Linear Regression in Python.
- Implemented heuristic algorithms in C++ to generate question tree and collect feedback from customers.
- Used feedback for reinforcement learning. Allows to predict the probability of customer conversion, arrival frequency and expected revenue in given situation.

Co-Founder, mesSmart.com *(Jan '16 - Oct '16)*

Market Place for Mess & Tiffin Services

- Developed a heuristic algorithm in C++ for *Travelling Salesman Problem* to find an optimal delivery path spanning all tiffin pickups and drops. Reduced delivery cost up to 30%
- Developed Android and Web Application using Python Django and AngularJS.

Projects

B.Tech Research Project - Submodular Function Optimization *(Jul '15 - Nov '15)*

- **About:** *Submodular Function Optimization* is a subset of ILP , proven to be polynomially solvable. *MLGC algorithm* was published by Dr. S. N. Maheshwari (Project Guide), having best time complexity for this problem.
- Reimplemented MLGC in C++ using different approach and efficient data structures.
- Optimized average running time up to 93% (16 times faster), tested on problem's standard inputs-set.

Low Latency Website Generator *(Dec '14 - May '15)*

- Designed a language MSL, allowing to develop a website in MSL's syntax, having modern framework's features like importing files, reusable components(ReactJS), interleaved for-loop, if-else and HTML-tags.
- Implemented a tool to compile all files and generate optimized c++ code in single file **server.cpp**, which is very low latency web server, serving designed website, featuring **multi-threading**.
- server.cpp has 'Database' class to store backend data. Allows to Dump/Load JSON formatted object from file.
- Used OcamlLex and OcamlYacc for parsing, Python for processing the Parsed Tree and implementing compiler optimization techniques and lots of manual heuristics, exporting the processed tree as C++ code.
- **Impact**: "*Low Latency website*" and "*web developer's freedom*" doesn't co-exists without such tool.

Frontend to Backend Synchronized ORM (Python and JavaScript) *(Jan '15 - Mar '15)*

- Implemented an *Object Relational Mapping* tool in python for MySQL database and JavaScript for frontend.
- Frontend ORM is linked to backend via API calls, secured by rules, defined in Rule-Engine.
- *state-updating-code* at frontend will update the state at backend as well, saving half of the developer's effort.

Extension of C++ macros [Under Process] *(Jun '17 - Present)*

➢ Designed prototype and partially developed a tool to parse "*modified C++ syntax*", consisting of rich macros and *exec-on-compile-time* code blocks; and convert into normal C++ code.

➢ Aimed to enhance developer's efficiency, without compromising run time efficiency.

Implemented handwritten digit identifier in C++ using deep learning techniques *(Jan '15 - Apr '15)*

Created 3D bike racing game using OpenGL, C++, Qt Designer in team of 3 *(Jul '13 - Nov '13)*

Academic Information

Year	Degree/Exam	Institute	Grade
2012 - 2016	B. Tech in Computer Science	Indian Institute of Technology, Delhi	6.4 / 10
2012	12th Board RBSE	Genius Sr. Secondary School, Kota	71.2%
2010	10th Board RBSE	Vidhya Bharti School, Baragaon	89.8%

Technical Skills

➢ **Expert**: C++, Python

➢ **Proficient**: C, Java, Linux, JavaScript, AngularJS, ReactJS, PHP, MySQL, Ocaml, Matlab etc.

Social Initiatives

➢ Actively volunteered at yes+ for stress management programs. Organized various workshops at IIT Delhi, helped more than 500 students.

➢ Initiated model school for rural kids providing them academic, moral and computer education.

Interests

Solving codechef problems, Studying mathematical theories, Designing algorithms, Studying books on self-development, growth theories and psychology, Meeting new people.