DEVANSHU SOMANI

in devanshusomani99   ✉ devanshusomani99@gmail.com   🏠 devanshusomani99.github.io   📞 *[+82] 010-4087-0387*

EDUCATIONAL QUALIFICATIONS

Year	Degree	Institute	Performance
2016 - 2020	B.Tech, Computer Science and Engineering	Indian Institute of Technology Kanpur	8.54 / 10.00
2016	Intermediate (CBSE)	Sarvodaya Sr. Sec. School, Kota	94.8%
2014	High School (CBSE)	Welspun Vidya Mandir, Kutch	10.0 / 10.0

SCHOLASTIC ACHIEVEMENTS

◇ Secured **All India Rank 117** in **JEE Advanced 2016** among 200,000 candidates.

◇ Secured **All India Rank 369** in **JEE Main 2016** among 1.2 million candidates.

◇ Selected for the prestigious **KVPY** scholarship in 2016, in stream SX with an **All India Rank 249**.

◇ Ranked among the **National Top 1%** of the Physics Olympiad **NSEP '16** and was selected for InPhO'16.

WORK EXPERIENCE

Samsung Research and Development   **Seoul, South Korea**
Software Engineer | Data Research Team   *Oct'20 - Present*

◇ Created a model for **predicting** the real-time auction **bid prices for advertisement spaces** on various platforms.

◇ Created a **personalized Recommendation System** for **Samsung TV+ users** using various Deep Learning techniques.

◇ Implemented a version of **BERT4Rec** with a DPPRanker module to create a **Diversity-aware** recommender system.

◇ The final model **outperformed baselines** like aws-personalize, NAIS and FISM by **24.77%** on our test dataset.

◇ **Predicting** the **watch times of TV shows and movies** on Samsung TV+ using ML models and Time-series Analysis.

Samsung Research and Development   **Seoul, South Korea**
Software Engineering Intern | Data Analytics Lab   *May'19 - Jul'19*

◇ Designed an **IoT Recommender System** for customers based upon the analysis of their **IoT usage patterns**.

◇ Applied **Collaborative Filtering** on a MySQL dataset using **ALS algorithm** and acquired **97.2% average accuracy**.

◇ Also implemented **Demographic Filtering** after carefully selecting correct features using **Pearson Correlation Matrix**.

◇ Increased the scope of the system to predict recommendations for **100K users** after achieving an **accuracy of 83.66%**.

ShopX   **Bangalore, India**
Software Engineering Intern   *May'18 - Jun'18*

◇ Built a **rating system** which **classifies the users** on a B2B e-commerce platform in **Gold, Silver etc. bands**.

◇ Used **QA feedbacks** and **transaction data** of the users to compute ratings and applied **K-Means Clustering** on it.

◇ Modelled the project so that it would **run everyday** on the updated input datasets by itself using **cronjobs**.

Accenture   **Delhi, India**
Project Intern   *Dec'18 - Jan'19*

◇ Designed a fixed directory system with a **rationalizing script to reduce redundancy** and repetition **in MIS reports**.

◇ Created a **re-work tracking application** to keep track of the company programs that are problematic and need rework.

PROJECTS

Relational Network for Zero Shot Learning   **IIT Kanpur**
Prof. Piyush Rai   *Aug'18 - Nov'18*

◇ Created a **2-branch Relation Network** that meta learns to compare images against semantic class embedding vectors.

◇ Generated feature maps using **Deep Neural Networks** and query samples generated by episode based training.

◇ Used **Mean Square Error Loss model** by regressing relation scores obtained by feature maps and relation module.

Placement Algorithm in Graph Theory   **IIT Kanpur**
Prof. Harish Karnick   *Oct'17 - Jan'18*

◇ Worked on the **student-job placement system** as its equivalent problem in **graph theory** which considers **jobs' priority order of students and also the vice-versa** where the relative preferences can be set by the placement office's policy.

◇ Implemented algorithms like the **Hungarian Algorithm** and **Branch and Bound Algorithm** to create the mappings.

Pike - Golang to x86 Compiler
Prof. Amey Karkare

IIT Kanpur
Aug'18 - Nov'18

◇ Implemented a compiler for a fully functional subset of **Go programming language** in python **from scratch**.

◇ Created a **Lexical Analyzer** using ply/yacc, **Parser**, **Intermediate Code Generator** and **Assembly Code Generator**.

◇ Incorporated advanced features - function overloading, multiple level pointers, auto type inference, struct assignment.

Delving into UNIX with gemOS
Prof. Debadatta Mishra

IIT Kanpur
Aug'18 - Nov'18

◇ Built **Paging structures** using context creation, mapped physical memory according to its virtual address layout.

◇ Implemented the major page fault exception handlers, **system calls** and basic interrupt and signal handlers.

◇ Provided concurrent access mechanisms to disk object store and implemented **Round Robin context scheduling**.

Hall Management System
Prof. Arnab Bhattacharya

IIT Kanpur
Jan'19 - May'19

◇ Built an **integrated system** to manage all hostel related activities: student search, room bookings, bills, announcements.

◇ Designed a **6 phase online hostel election procedure** and a guest room booking system with overlapping schedules.

◇ Used **sqlite3 databasing** with **Django** python web framework for the interface and graphviz for generating ER models.

Shoot 'em Off - Multiplayer Shooting game
Prof. Nisheeth Srivastava

IIT Kanpur
Aug'18 - Nov'18

◇ Designed an online multiplayer shooting game using **node.js** along with **Socket.io** and **Phaser** libraries.

◇ Used the Phaser technology to control the player's movements and Socket.io to communicate data between opponents.

◇ Also created a fully functional game login system using **SHA512 hashing** method for storing passwords.

OTHER PROJECTS

Profile Management System: Institute student information SQLite database management android application
Parallel Star Clustering: Clustered moving stars in free space parallely using multiple cores in HPC system
Microsoft code.fun.do Hackathon 2018:   IPL match predictor web app based on Django, python and scikit-learn
Microsoft code.fun.do Hackathon 2017:   Step tracker based fitness mobile application using phone sensors

TECHNICAL PROFICIENCY

Programming / Scripting   C, C++, Python, Bash, Awk, R, Octave / Matlab, Make
Web Development   HTML / CSS, Javascript, PHP, Django, Jekyll, Bootstrap, node.js, MySQL
Utilities and Tools   Git, Vim, Linux Shell Utilities, PyTorch, LaTeX, MySQL Workbench

RELEVANT COURSEWORK

Data Structures and Algorithms	Operating Systems	Fundamentals of Computing	Algorithms - II
Probability and Statistics	Software Engineering	Principles of Database Systems	Compiler Design
Discrete Mathematics	Computing Laboratory	Computational Cognitive Sciences	Abstract Algebra
Theory of Computation	Computer Architecture	Introduction to Machine Learning	Parallel Computing

EXTRA CURRICULAR ACTIVITIES

◇ Mentored a group of freshmen about **Django Web Development** under ACA, CSE Department, IIT Kanpur.

◇ Awarded with promotion in Taekwondo level - From **White Belt to Yellow Belt** in district level Taekwondo test.

◇ Served as an **Senior Executive in Photography Club, IIT Kanpur** and was a part of the team in-charge of capturing visuals for the college's official calendar.

◇ Served as an **Senior Executive in Entrepreneurship Cell, IIT Kanpur** and was involved in creating and editing the officially distributed media content.

◇ Publicized and helped in organizing important National events like **TEDex** and **eSummit** with Entrepreneurship Cell, IIT Kanpur in 2018.

◇ Stood **2**nd in **Crime Run** event, a strategy based puzzle solving event in Techkriti'17, IIT Kanpur's technical festival.

◇ **Mentored** a group of **6 freshmen** from UG-17 batch throughout the first year of their stay at the IIT Kanpur.