

Vinay Kumar Agarwal

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Strengths : Backend Engineering and Algorithms

[Portfolio](#)

Interests : Problem Solving and Computer Systems

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Education

Year	Degree/Certificate	Institution/Board	CPI/Percentage
2015-2019	Bachelor of Technology(ME,CSE)	Indian Institute of Technology Kanpur	8.2/10
Dec, 2017	Exchange Internship (Research)	Tomsk Polytechnic University, Tomsk, Russia	5.0/5.0
2015	AISSEE, XII(CBSE)	Nehru World School, Ghaziabad(U.P.)	97.2%

Scholastic Achievements

- Secured an All India Rank **573 in IIT JEE (Main) 2015** and **1139 in IIT JEE (Advanced) 2015** amongst 1.5 million candidates
- Built high Sharpe alphas for USA liquid stocks and ranked **5th** during **IIT Kanpur Alphathon 2019** organised by **Worldquant**
- Secured **Overall Rank 212 (in 2015)** in finals and **Zonal Rank 4** in prelims in **National Science Olympiad** conducted by SOF
- Secured **Overall Rank 178 (in 2014)** and **Zonal Rank 17** during the finals in **National Science Olympiad** conducted by SOF
- Awarded for **National top 0.1% in Informatics Practices** and **Mathematics** in AISSEE 2015 by HRD ministry of India
- Cleared **NSEC 2014** and **NSEA 2014** conducted by Indian Association of Physics Teachers

Research Experience

Junior Research Fellow, TPU, Russia | Supervisor: Prof. Sergey Axyonov, **Cybernetics Department, TPU** DEC 2017

- Familiarized with the possible **structures for information extraction** from STL images using image processing routines
- Experimented with **Decision Trees, Random Forests** and **KNN** for classification task using python machine learning libraries
- Pre-Processed lung images and made an **automatic learning tool** to mark abnormal (infected) regions in the image
- Successfully **improved the tool accuracy to 92%** and proposed implementation of the same for different body parts

Key Work Experience

Software Engineer, Inshorts Medialabs Pvt. Ltd. | **Golang, MongoDB, Redis, Kafka, GCP** SEPT 2020 – PRESENT

- Responsible for constant backend development work for **Public App** by Inshorts (100M+ downloads on Google Play Store)
- Writing modular, reusable and readable backend code allowing extensibility and high operational performance.
- Primary author of code for multiple features on the application including **User Search (using Elasticsearch), Repost, P2P chat, Advertisement pipeline, Notification system** using FCM, etc.
- Introduced graph databases (**Neo4j**) in the system for improved performance in recommending high affinity users.
- Integrated various third party services including **Rundeck, Exotel, Whatsapp MaytAPI, Razorpay, Zoho Books**, etc.
- Solely responsible for development of the data processing and aggregation pipeline designed using **Druid**.

Applications Engineer, Oracle India | **Java, MySQL** JULY 2019 – AUG 2020

- Wrote efficient and maintainable code for supply and inventory planning engine and features built around it in JAVA.
- Worked on feature demands and provided ideas for enhancing the platform usability from end user perspective.

Back-End Developer Intern, IITK NYC Office | **Scala, Akka, CouchBase, ZeroMQ** MAY 2017- NOV 2017

- Worked on the backend of a distributed web application, written in Scala
- Rendered the content asynchronously using **Couchbase DB** and hosted **Zipkin server** for tracking internal services latency

Selected Projects

Demographic and economic Analysis | Supervisor: Prof. Arnab Bhattacharya, **IIT Kanpur** AUG 2018-NOV 2018

- Worked on a United Nations database to draw counter intuitive insights using **Agglomerative clustering** and **Regression**.
- Implemented **Relief Algorithm, PCA** for feature selection; **Information Gain** for decision making; and **Ensembling learning algorithms** for classification of 147 countries globally into developed, developing and underdeveloped countries.

AcadHandle | Supervisor: Prof. Arnab Bhattacharya, **IIT Kanpur** JAN 2019-APR 2019

- Built a web application using **LAMP** stack to emulate academic procedures for campus students, covering the complete cycle of a semester including and not limited to registration, course request and allocation, grade distribution, etc.
- Incorporated best schema design principles to avoid redundancy and normalised the complete structure on DB front.

TreadWill | Supervisor: Prof. Nitin Gupta, **IIT Kanpur** MAY 2016-JUL 2016

- Collaborated for development of the website (www.treadwill.org/) aimed for treating people suffering from depression
- Developed API modules using **Django Python Framework** and **MySQL** and improved UI using **JavaScript** and **Bootstrap**

Technical Strengths

Programming : C/C++, Golang, JAVA, Python, SQL, Neo4j
Web : Django, Django-REST, Echo, SpringBoot, Bootstrap, HTML, CSS
Utilities : Linux Shell Utilities, GIT, LATEX

Relevant Coursework

Computer Science : Data Structure and Algorithms, Shell, Database Systems, Computer Networks, Data Mining, Scripting
Mathematics : Scientific Computing, Sampling Theory, Probability and Statistics, Complex Analysis, Linear Algebra