Vinay Kumar Agarwal

vka0797@gmail.com
dart-vinay.github.io
+91-8447911261, +91-7054118096

Strengths : Structures and Algorithms
Interests : Problem Solving and Computer Systems

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	AISSCE, XII(CBSE)	Nehru World School, Ghaziabad(U.P.)	97.2%
2013	AISSCE, X(CBSE)	Dewan Public School, Hapur(U.P.)	10/10

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 AISSCE 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

Work Experience

Applications Engineer, Oracle India | *Java, MySQL*   *JULY 2019 – PRESENT*
− Write efficient and maintainable code for supply and inventory planning engine and features built around it in JAVA.
− Work on feature demands and provide ideas for enhancing the platform usability from end user perspective.

Networking Intern, Wipro Limited | *Python*   *MAY 2018 – JUL 2018*
− Collaborated with the networking department to devise a **threat intelligence system** for the organisation
− Completed the CCNA course and worked on **network simulations** using Cisco Packet Tracer to make efficient networks
− Authored a **python tool** for automated searching of malicious IPs and domains and generating threat intelligence reports

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 restricted the creation of reserved usernames
− Researched on **Akka** tracing extension using **Zipkin server** for tracking internal requests and performing code analysis

Software Engineer Intern, Maximl Labs | *Python*   *DEC 2016*
− Contributed towards more robust API with shorter, modular code and implemented using **RESTful APIs with Django**
− Used **OAuth2** for secure login, **Celery** as asynchronous task scheduler and **Web sockets** for interactive communication

Selected Projects

Demographic and economic Analysis | *Supervisor: Prof. Arnab Bhattacharya, **IIT Kanpur***   *AUG 2018-NOV 2018*
− Worked on 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 complete cycle of a semester including and not limited to registration, course request and allocation, grade distribution by the professor, 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 |Utilities : C/C++, Golang, JAVA, Python, Scala with Akka | Linux Shell Utilities, OpenCV, GIT, LATEX, MATLAB
Web | Others   : Django, Django-REST, SpringBoot, Bootstrap, HTML, CSS | Pandas, Numpy, Scipy, Matplotlib, SkLearn

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