Kritagya Dabi

Final Year Undergraduate
Dept. of Computer Science and Engineering, IIT Kanpur

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Educational Qualifications

Year	Degree	Institution	CGPA/%
2018	B.Tech in Computer Science	Indian Institute of Technology, Kanpur	9.0*/10.0
2014	XII Grad, M.P. State Board	Shree Vidhya Sagar School	87.2%
2012	X Grad, C.B.S.E Board	PIS School Dewas	10/10

* After 6 semesters

Academic Achievements

- Recipient of Academic Excellence Award IIT Kanpur, amongst top 7% of batch (2015)
- Secured an All India Rank of 577 in JEE-Advanced out of 150 thousand students (2014)
- 99.88 percentile in JEE Mains among 1.5 million students (2014)
- Honored by Madhya Pradesh State Government for excellent academic performance in Intermediate/+2 (2014)
- Secured an All India Rank of 294 in Kishore Vaigyanik Protsahan Yojana (KVPY) examination (2013)

Selected Projects

Cross Compiler for C to MIPS

Supervisor: Prof. Amey Karkare *(Jan 2017- May 2017)*

- Built a cross compiler for C in C++ for MIPS architecture
- Improved the performance by peephole optimization like jump over jump and dead code elimination

Not Another Completely Heuristic OS

Supervisor: Prof. Mainak Chaudhary *(Aug 2016- Dec 2016)*

- Extended the NachOS operating system to perform basic operating system functions including fork, join, sleep, exec and exit
- Implemented and evaluated performance of various algorithms for scheduling processes including Non-Preemptive First in First out, Shortest Job First, Pre-emptive Round Robin and UNIX Scheduling
- Implemented shared memory allocation, demand paging and page replacement algorithms including FIFO, LRU and LRU-Clock and analyzed their performance.

Zero Shot Learning

Supervisor: Prof. Piyush Rai *(Aug 2016- Dec 2016)*

- Studied the various existing models for Zero Shot Learning and recent advancements in the topic
- Implemented the models like Cross-Modal Transfer, Semantic Output Code Classifier & Embarrassingly Simlpe Approach to ZSL and compared their performance on various grounds like test time, training time and accuracy

Cartoon Auto-painter

Supervisor: Prof. Vinay P. Namboodiri *(Aug 2017 - Nov 2017)*

- Project aimed at building a conditional Generative Adversarial Network based neural network for image to image translation of hand drawn cartoons to colorful images
- The model is also capable of allowing users to indicate preferred colors, for learning a large number cartoons images is obtained from the Internet with a crawler

Positions of Responsibility

- **Academic Mentor**
  Counselling Service, IIT Kanpur *(May 2015 - Apr 2016)*
- **Secretary, Electronics Club**
  IIT Kanpur *(May 2015 - Apr 2016)*
- **Secretary, Dance Club**
  IIT Kanpur *(May 2015 - Apr 2016)*

Work Experience

Nutanix, Bangalore India (May 2017 - Jul 2017)

Software Engineering Intern, Nutanix CALM Team

Terraform Provider Plugin **[GOLANG]**

- Built a terraform plugin for Nutanix Acropolis HyperVisor
- Implemented the operations such as create, read, update, delete and retrieval of entities like virtual machines, nutanix images etc., using the V3 APIs that Nutanix exposes
- Designed extensive test cases for testing the plugin using Go-Lang test framework

Teaching Assistant (Aug 2017 - Current)

Data Structure and Algorithms, ESO207

Instructor : Prof. Sumit Ganguly, IIT Kanpur

Relevant Courses

- Data Structures & Algorithms
- Compiler Design
- Databases
- Operating Systems
- Computer Organization
- Logic in Computer Science
- Machine Learning
- Visual Recognition
- Computer Security
- Computer Networks
- Theory of Computation
- Game Theory

Technical Strengths

Programming Languages: C/C++, Go, Python
Platforms: Linux, Windows
Tools: Git, LaTeX, Vim, OpenCV, MySQL
Web Development: Django, JavaScript, HTML, CSS

Other Projects

- **Animatronic Robot Head :** Developed a social robot capable of talking and expressing various emotions
- **ChatBot :** Developed a comprehensive client-server messaging application in python
- **Twitter Data Visualizer :** Web App on Django platform, that analyze tweets and generate various popularity graphs for them using Google Chart APIs
- **Course Review Platform :** A Web platform for giving course feedback and accessing course material
- **Markov & Hidden Markov model :** Studied application of hidden markov model in Speech Recognition
- **Securing Web Server :** Explored vulnerabilities like SQL Injection, Cross-Site Request Forgery and Cookie Thefts and improved server security by Privilege Separation and Server-Side Sandboxing
- **Home Automation System :** Designed home automation system using only 8-bit micro-controllers