Yugesh Ajit KOTHARI
Software Systems & Full Stack Development

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🎓 EDUCATION

2017-2021*	Bachelor of Technology - Computer Science and Engineering - **Indian Institute of Technology Kanpur**
	Cumulative Grade Point Average/CGPA : **9.51/10.0** ∼ (3.8/4.0)
2017	ISC, Hill Top School, Jamshedpur, **97.0% score**

★ HONOURS & AWARDS

2018-Present	**Aditya Birla Scholarship** - Among 15 candidates across all IITs
2017	**AIR 120** JEE Advanced, **200,000 candidates** | **AIR 193** JEE Mains, **1.5 million candidates** (AIR = All India Rank)

▤ SKILLS

Languages	C, Python, Java, JavaScript(ES6), GoLang, Bash and Shell Scripting, Haskell, OCaml, Oz
Web	NodeJs, MongoDB, ReactJs, ExpressJs, Django, PostgreSql, Hadoop/Hbase (beginner), Redis
Misc.	Git, Travis CI, Jira, Jenkins, Puppet, Dockers, Nginx, LaTeX, Heroku, 🐧, CentOS, kvm, libvirt, Linux-From-Scratch

🖥 EXPERIENCE

RESEARCH ASSISTANT, PURDUE UNIVERSITY, USA (UNDER PROF. ROOPSHA SAMANTA)   MAY-JUL 2019
- Developed infrastructure to trans-pile a parsed C program to a Static-Single-Assignment form Boolean Program; with intent to reason about program behaviour using an SMT-solver like **Z3**. This enabled our tool to find errors in the execution path.
- Worked on developing a novel framework for Lazy predicate abstraction model checking and symbolic execution based program repair using **CPAChecker** that leverages partial predicate abstraction for automated reasoning about incorrect program behaviour and a code synthesizer (like **sketch**) to suggest repairs. Approach kept track of error dependencies to minimize regressions caused by repairs.

Java | Ant | Antler | CPAChecker | Research | Program Verification | Program Repair

MEMBER OF TECHNICAL STAFF, NUTANIX (CLOUD APPLICATION LIFECYCLE MANAGEMENT)   MAY-JUL 2018
- Implemented from scratch a task module that assists VM/container deployments by allowing configurations for authenticating to third-party ReST servers to fetch information and set as properties on machine as per requirement. **(now in production on CALM dashboard)**
- Developed a web-UI in ReactJs for allowing such configurations, embedded document models at the backend (Python) and a GoLang based micro-service task executor on Nutanix's proprietary framework that registers to a message-queue and executes ReST API calls.

Python | Javascript | ReactJs | GoLang | micro-service architecture | cloud | virtualization | networking | unit-testing

</> PROJECTS

MICROSOFT CODE.FUN.DO - NATIONAL WINNER | WORLDNEWSENSE | GITHUB.COM/YATINDANDI/CODEFUNDO   MAY 2018
Machine learning project that used NLTK library for Natural Language Processing and Sentiment Analysis to summarize, filter and present news articles on World Politics filtered by topics and countries; scraped and analyzed over a year's news data to predict relations between countries.

Django | NLP | Heroku | jQuery | D3.js | full-stack-development

LIFE@IITK - PROGRAMMING CLUB, IIT KANPUR - PROJECT TEAM LEAD | GITHUB.COM/LIFE-IITK   LIFEIITK   MAY 2019-PRESENT
Unified web-app for all activities, updates and personal schedule (including individual academic and non-academic student-body updates) at IIT Kanpur. Managed development and dev-ops - dockerized deployment on IITK VMs, DNS and infrastructure management.

ReactJs | Django | CentOS | Nginx | Dockers | Software-development | project-management

SMART PURCHASE WEB-APP   AUG 2019
Developed a purchase management web-app for a Non-Profit Organisation that allows different departments to keep track of warehouse inventory, purchases made and quotations for easy management and uniformly priced purchases across departments.

ReactJs | NodeJs | Nginx | Web-hosting

SAT SOLVER & LOGIC BASED SUDOKU SOLVER | GITHUB.COM/YUGESHK/CS202   DEC 2018
A propositional logic based SAT solver, that given a boolean expression in BNF form finds a satisfying model using DPLL technique.

Formal Logic | python | software-development

OZ INTEPRETER - COURSE PROJECT FOR CS350 | GITHUB.COM/YUGESHK/CS350   OCT-NOV 2018
A declarative-concurrent interpreter for Oz based on the Kernel language (management of the SAS, Multi-stack, execution environment, etc.)

Oz | programming-languages | functional-programming

✅ RELEVANT COURSEWORK

- Data Structures and Algorithms | Software Lab
- Programming Languages | Convex Optimisations
- Probability and Statistics | Calculus-I | Linear Algebra
- Formal Logic | Mathematics for Computer Science
- Computer Organisation & Instruction Set Architectures

➕ ONGOING/UPCOMING COURSES

- Operating Systems | Advanced Algorithms
- Parallel Computing & HPC | System Securities
- Theory of Computation | Machine Learning
- Databases | Linux Programming lab

🎗 POSITIONS OF RESPONSIBILITY

OVERALL COORDINATOR, SUMMER OF CODE, IIT KANPUR | IITK-SoC   MAY-JUL 2019
Organized and coordinated a **Nutanix** funded Summer of Code program at IIT Kanpur that trained 100 students in Full Stack Development, with end projects aimed at creating societal impact. Designed the program curriculum and mentored students during the coding phase.

SYSTEMS ADMINISTRATOR, STUDENT SERVERS, IIT KANPUR   APRIL 2019-PRESENT
Manage a couple of student CentOS VMs, that run nginx reverse proxies, docker micro-services and database clusters.