Sudhan Chitgopkar

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Education

Harvard University Aug 2023 - May 2024
(M.S) Computational Science & Engineering

University of Georgia Aug 2019 - May 2023
(B.S) Computer Science, (B.A) International Affairs *GPA: 3.99/4.00*
Recognitions: Summa Cum Laude, TEDx Speaker, Presidential Award (top 0.1% of class), Undergrad Commencement Speaker, 2023 Engineering Excellence Award (top 1 CS student)

Experience

Amazon May 2022 – August 2022
Software Engineering Intern *Seattle, WA*
- Created an serverless application to automate server load-shedding on *.amazon.com's data-store
- Developed an AWS Lambda in Java to interface with CloudWatch monitoring APIs, analyzing system duress
- Decreased system duress notification time by >90% by automating AWS SNS to page customer's on-call

Southern Company May 2021 – May 2022
Technology Security Intern *Atlanta, GA*
- Analyzed DNS, IP, and WhoIs data on 280+ cases to identify a threat actor causing $1.2M+ in damages
- Briefed the Assistant US Attorney's office, FBI, Secret Service, and 7+ utility partners on data patterns
- Designed and developed a dashboard for documentation version control of 50+ nuclear software applications

University of Georgia Aug 2020 – Dec 2021
Teaching Assistant *Athens, GA*
- Assisted 35+ students with Theory of Computation coursework 3 times per week
- Taught and solved problems involving finite automata, decidability, and Turing machines

Research Fellow
- 1/30 students awarded a grant to conduct 340+ hours of intensive, faculty-mentored research
- Derived a mathematical model for Bayesian Network data tuning using DNA sequencing algorithms

Leadership & Involvement

SolveUGA Aug 2022 – Present
Founder, President *Univ. of Georgia*
- Founded UGA's flagship computational problem-solving team with 200+ members and 2 faculty
- Leading weekly discussions on algorithmic complexity and optimization problems
- Solving and teaching various toy-problems in computer science and math to undergrad and grad students

Small Satellite Research Lab Apr 2021 – Present
Software Engineer *NASA Ames*
- Developing core flight software in C++ using NASA F' for low-earth-orbit cube satellite, MEMESat-1
- Automating satellite command-execution-testing using Python, telemetry libraries, and ground station APIs

UGAHacks May 2021 – May 2022
Director *Major League Hacking*
- Led 7 undergrads in garnering $30,000+ in funding to host UGA's flagship annual hackathon
- Coordinated with 50+ representatives across 14 companies to host 12+ workshops over 48 hours

Projects

JADE | *C, C++, OpenGL, SDL* Jan 2022 – May 2022
- Developed a graphics engine from scratch with support for 2D and 3D rendering
- Used for mathematical visualization of fractal generation, modular multiplication, and cellular automata

WikiViz (HackGT 9 Winner) | *JavaScript, P5.js, APIs* Oct 2022
- Visualized internal connections between Wikipedia articles using an interactive 3D undirected graph
- Available for usage at `sudhan.dev/wikiviz/html`

Evolutionary Playground | *Python, DEAP* Aug 2021 – Dec 2021
- Developed a series of evolutionary computation programs to solve optimization and root-finding problems
- Solved various NP-complete (i.e. n-Queens) and NP-hard (i.e. Traveling Salesman) problems

Swarm Sense | *Java, Processing, Python, Jupyter Notebook* May 2018 – May 2020
- Created a genetic algorithm from scratch to breed competitive co-evolution in Boid flocks
- Conducting data analysis on flock performance using Jupyter Notebook

Technical Skills

Languages: Java, C/C++, Python, BASH, PHP, SQL, HTML + CSS, Javascript
Frameworks/Libraries: Bootstrap, SDL, DEAP, Processing, P5.js, OpenGL
Dev Tools: AWS Lambda, DynamoDB, Emacs, *nix Systems, Shell, Figma, Git, LaTeX, CI/CD