Ashish D'Souza

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EDUCATION

Georgia Institute of Technology | Atlanta, GA — May 2023

- Bachelor of Science in *Computer Science* — Threads: Intelligence & Information Internetworks — Major GPA: 4.0

EXPERIENCE

Amazon | Palo Alto, CA | *Software Development Engineer Intern* — May '21 - August '21

- Worked in Search Science & AI with Magnus Ranking team to enhance search quality using the latest IR and NLP research
- Built distributed computing platform to further improve GPU-accelerated training speed by parallelizing advanced ML models
- Enabled multi-GPU training on multiple machines for BERT, GPT-3, DNN models using PyTorch with distributed data parallelism

Nead Werx, Inc. | Atlanta, GA | *Database Developer Intern* — May '20 - Aug '20

- Developed audio transcription database with PostgreSQL and scripted advanced database management functions using Perl

Optical Science Center for Applied Research | Dover, DE | *Research Intern* — Jun '17 - Jun '19

- Constructed an autonomous aerial greenhouse gas data collection module with Arduino
- Web scraped satellite data on greenhouse gases with Selenium and created prediction models with TensorFlow neural networks

PROJECTS

Guardian | https://github.com/computer-geek64/guardian — Jan '22

- My home surveillance and CCTV system that features motion detection and synchronized live audio and video streams over native HTTP
- Implemented a multiprocessing load balancer to deal with resource-intensive stream processing, and leveraged shared memory for IPC
- **Software:** Python, Docker, NGINX, NGINX Unit, Flask, FFmpeg, OpenCV, Motion, Docker Compose

Politify | https://github.com/computer-geek64/politify — Feb '21

- Determines the political bias among public figures by analyzing their tweets in an unbiased way using publicly available data on the internet
- Designed back-end API and DBMS, web scraped tweets and wiki sources to obtain information on public figures for dataset aggregation
- Trained BERT model for political classification and used cloud ML services to create keyword-based sentiment analysis helper model
- **Software:** Python, PyTorch, Transformers, CUDA, Pandas, Flask, PostgreSQL, ReactJS, Selenium, OpenAI GPT-3, Google Cloud

Huffskew | https://github.com/computer-geek64/huffskew — Jan '21

- An optimization of the Huffman compression algorithm for highly skewed alphabet distributions using an ordered replacement method
- **Software:** C++, Boost Libraries

Fizz | *BlackRock Winning Project at HackGT 7* | https://devpost.com/software/hackgt7 — Oct '20

- A web-based interactive personal financial consultant, providing the beginning investor with insight rivaling that of financial experts
- Developed the back-end API and managed a database cluster. Also helped design the NLP model and financial analysis assessments.
- **Software:** Python, Flask, CQL, JavaScript, ReactJS, DataStax Astra, Google Dialogflow, Google Firebase

COVID-19 Survival Calculator | https://github.com/computer-geek64/covid19-survival-calculator — Mar '20

- A web application that allows users with the coronavirus to calculate the probability of their survival
- Programmed the back-end REST API and developed the user demographics database system. Also web scraped for and ran data analysis on live COVID-19 datasets, and helped devise the gradient boosting machine learning models.
- **Software:** Python, Django, Jinja, PostgreSQL, Pandas, XGBoost, LightGBM, Ruby, Nokogiri, JavaScript, HTML/CSS

Firestorm | https://github.com/computer-geek64/firestorm — Dec '18 - Present

- Created and maintained a personal server for file sharing, automated backups, personal informatics, media streaming, gaming, etc.
- Built a remote private projects VCS hosting system using Git and backed by a PostgreSQL database, accessible through the web interface
- Hosted an OpenVPN server, and fixed DNS leaks by implementing a private recursive resolver and domain filter, secured with DNSSEC
- **Software:** Python, Flask, Jinja, PostgreSQL, SQLite, HTML/CSS, JavaScript, Apache, CentOS 8

AWARDS

- HackGT Hackathons — *BlackRock Sponsor Award for Fizz Project* (2020), *PDI Sponsor Award for MileSnap Project* (2019)
- SkillsUSA Computer Programming — *National Gold Medalist* (2018), *4x State Gold Medalist* (2015-19)
- Regional Multi-state Science Fair — *First Place* (2018), *Third Place* (2017)

SKILLS

- **Programming Languages:** Python, C/C++, Java, Bash, SQL, JavaScript, HTML/CSS, LaTeX, Perl, Ruby, PHP, R
- **Frameworks:** Flask, Django, PyTorch, TensorFlow, Pandas, Spring Boot, Pistache, Rails, OpenCV, Selenium, SocketIO, JavaFX & Swing
- **Software:** Git, Docker, NGINX, Apache, NGINX Unit, AWS (S3, EC2, ECR), Google Cloud (OCR, NLP), Arduino, Maven
- **Databases:** PostgreSQL, MySQL, Redis, MongoDB, Apache Cassandra, SQLite, MariaDB
- **Operating Systems:** Linux (Arch, CentOS, RHEL, Debian, Fedora, Kali, Qubes, Raspbian, Ubuntu), Windows, OS X