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

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
- Optimizes 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

TimeLock | https://github.com/computer-geek64/timelock   May '20
- TimeLock is a database-oriented implementation of the theoretical concept of time-lock encryption, using RSA 2048-bit encryption
- Built the REST API to perform CRUD operations on the database, and the client CLI program to interface with the API
- **Software:** Java, Spring Boot, PostgreSQL, Maven, Java Persistence API (JPA)

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 running a custom version of CentOS 8 for secure file sharing/centralization, remote code development, penetration testing, password/secret management, media streaming, and gaming.
- Built a private projects codebase using Git VCS and backed by a PostgreSQL database system, accessible through the web interface
- **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, Java, C, C++, Bash, SQL, LaTeX, JavaScript, HTML/CSS, Perl, Ruby, PHP, R
- **Frameworks:** Django, Flask, PyTorch, TensorFlow, Pandas, Spring Boot, Rails, Selenium, SocketIO, OpenCV, JavaFX & Swing
- **Software:** Git, Docker, AWS (S3, EC2, ECR), Google Cloud (Dialogflow, OCR, Natural Language), Android Studio, Arduino, Maven
- **Databases:** PostgreSQL, MySQL, MongoDB, Apache Cassandra, SQLite, MariaDB
- **Operating Systems:** Linux (Arch, Fedora, Debian, CentOS, Kali, Qubes OS, Raspbian, Ubuntu), Windows, OS X