Anish Goyal

Aspiring Computer Engineer

Contact

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Career Objective

I am deeply passionate about programming with applications and driven to elevate my skillset. With an unwavering enthusiasm for learning, I am prepared to immerse myself in any given task and collaborate with esteemed mentors and peers to unleash my full potential. I am determined to explore the intricacies of hardware and software, and leverage my knowledge to design innovative solutions and advance technological frontiers. I am confident that I can leverage their cutting-edge resources and guidance to embark on a transformative journey of growth, knowledge acquisition, and meaningful contributions to the field of computer engineering.

Education

The Gwinnett School of Math, Science and Technology
Expected Graduation: May, 2024

GPA 3.6/4.0   **NGA** 90.20/100

Relevant Coursework

- AP Computer Science Principles (5/5)
- AP Computer Science A (5/5)
- AP US History (5/5)
- AP Comparative Government & Politics (4/5)
- AP US Government & Politics (3/5)
- Data Science & Analytics II (96/100)
- Applications of Linear Algebra in Computer Programming (104/100)
- Advanced Calculus II (100/100)
- AP Calculus AB (5/5)
- AP Biology (4/5)
- Engineering Applications (92/100)
- Physics & Engineering (94/100)
- CIST 1001: Computer Concepts (95/100)
- CIST 1122: Hardware Installation and Maintenance (95/100)

Clubs

- Computer Science Club
- Technology Student Association
- Robotics Club
- Computer Science Honor Society

Experience

Schonken and Associates — June, 2023–now
Technical Assistant

- Created cmdlets to automate client onboarding into a Firebase database

16796 Red Robodragons — September, 2020–now
First Tech Challenge Robotics

- Applied SCRUM, SWOT, and other agile management principles to maintain progress
- Created an object-oriented interface with GPIO programming in the REV Robotics Expansion Hub to automate drivetrain movement

GSMST Computer Science Club — August, 2020–now
Chief of Competitions

- Created weekly seminars in cybersecurity (e.g. rootkit hunting, XSS)
- Tutored CS-enrolled students in Python/Java

One Mission Church — October, 2019–now
Sound Engineer

- Organized the stage and instruments for performers on Sundays
- Arranged the band during rehearsals to ensure a good fusion of sound for each service

Proficiencies & Skills

- **Languages:** R, Python, Java, HTML, CSS, Javascript, PHP, SQL, Bash, Powershell, Perl, Rust, LaTeX, and C#
- **Libraries:** TensorFlow, Keras, NumPy, Sci-kit Learn, PyTorch, Pandas, OpenCV, Seaborn, Sympy, Matplotlib, Flask, Django, and Bootstrap
- **Cloud/DBMS:** MongoDB, AWS, Firebase, VMWare vSphere, and Azure
- Proficient in Office 365, Google Workspace, and Adobe Creative Cloud
- Introductory fluency in Spanish

Projects & Research

Wireless Online Real-time Language Expression Yielder (WORLEY) June, 2023–now
A robot hand that can perform sign language in real time

- Created a mobile application for live speech input with `WebRTC` audio streaming
- Implemented a voice activation detection model on the server to detect speech and extract continuous segments
- Integrated OpenAI's `WSPSR` to transcribe speech segments into text
- Developed a custom-built transformer model from the `ASLG-PC12` dataset to translate transcribed text to American Sign Language gloss

VamBan October, 2022–November, 2022
Vim kanban board editor

- Compiled the program with g++/gcc, linking against the `ncurses` library.
- Added support for a variety of terminal sizes, colorschemes, and `i3wm`

First Tech Challenge Robotics September, 2022–May, 2023
Deep learning computer vision model

- Peformed classification with receptive fields while employing weight decay, alternative learning rate, and transfer learning with a Non- Maximum Suppression post-processing layer
- Used a single shot multibox detector with ResNet18 as the backbone with 600 labeled images
- Exported the model to the ONNX runtime and converted it to a Tensorflow Lite model for deployment
- Implemented multi-threading to perform operations in parallel and stored model inferences in a queue for faster response times

Rofi Abbreviator, Speller, Pronouncer, Thesaurus, and Dictionary (RASPTD) September, 2022–October, 2022
GUI to help me with trivial English tasks

- Designed a user-friendly GUI for efficient interaction with basic English tools.
- Configured all dependencies, including `xclip` for copying selected spelling suggestions to the clipboard, `libnotify` for notifications when copying a spelling suggestion, `tre` for searching a wordlist and providing spelling suggestions, and `sox` for playing pronunciations.

Algorithms August, 2022–now
A repository with solutions to algorithmic programming problems

- Tackled challenges in data structures, sorting algorithms, dynamic programming, graph algorithms, mathematical computations, and string manipulation
- Participated in competitive programming competitions in school and onlin

Polynomial Interpolation and K-Mean Mining to Predict Crime Rates August, 2021–May, 2022
Science/Engineering fair

- Created a research plan to apply the scientific method and authored a 116-page logbook to communicate my project results
- Applied six `sci-kit learn` machine learning algorithms with and without principal component analysis to predict crime rates in Atlanta based on date/time/location

Awards & Honors

- Governor's Honors Program 60 Alumni in Engineering: Computer Programming
- Member of the National Society of High School Scholars
- Member of the Computer Science Honor Society
- AP Scholar With Distinction
- USACO silver medalist
- CyberPatriot national semifinalist
- 3rd place nationally in Lockheed Martin's CodeQuest 2023
- 8th place nationally in picoCTF 2023
- Two-time robotics state champions (2021 & 2022)
- Participation in the 2nd annual Georgia Tech Probability & Statistics Competition