Shreyas Lad

Low Level Developer

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EXPERIENCE

Youth Coding Workshops, Dublin, CA — *Head of the Workshop Facilitator Department*

MAY 2020 - PRESENT

- Leads a team of 7 out of 12 staff members
- Reached out to the Parent Faculty Club of Fallon Middle School and Tri-Valley Innovations to give children in the Bay Area the opportunity to learn computer science
- Works with tutors across all languages to plan and implement new competitions to further challenge students
- Engages students by planning out demos for future workshops and daily questions of the day

Youth Coding Workshops, Dublin, CA — *Curriculum Designer*

JANUARY 2020 - PRESENT

- Worked with other tutors and curriculum designers to plan out a C/C++ curriculum in order to teach students Data Structures and Algorithms, Memory and Code Execution, and SIMD
- Worked with other tutors to revamp the existing Python curriculum, planning videos and designing warm-ups and projects for students to complete
- Head tutor for Python, leads two other tutors during workshops

Living Arroyos, Livermore, CA — *Volunteer*

APRIL 2019

- Worked with people around the Tri-Valley area to plant over 200 trees to create a safe and natural flood protection system for the nearby creek

Splatter Festival, Dublin, CA — *Volunteer*

SEPTEMBER 2018

- Worked with other DHS students and interacted with attendees to check in, find, and check out bicycles, noting each transaction on a spreadsheet.

SKILLS

Technical Skills

Proficient in C, x86 Assembly, Python, Java.

Bash, Git, GitHub, Makefile.

Soft Skills

Self Learning.

Creative and Critical Thinking.

Problem Solving.

Communication, Articulation, and Teamwork.

ACHIEVEMENTS

Honour Roll for 3 years (In Progress).

Represented Dublin High School at the 2018 California State Science Fair (Freshman Year).

Presented personal projects at several HackTheFuture hackathons.

Won 5 gold medals for the City of Dublin in the Dublin Unified Soccer League in 7 years of playing

EDUCATION

Dublin High School, Dublin, CA — *Diploma*

AUGUST 2018 - JUNE 2022 (In Progress)

Harvard CS50x, Dublin, CA — *Certificate*

SEPTEMBER 2020 - PRESENT (In Progress)

PROJECTS

Sonar — *Type-1 Hypervisor*

Implements a solution to the problem of constantly restarting machines to test new versions of operating systems. Virtualizes the guest kernel and aims to provide an interface to easy store state and swap different versions of kernels for seamless updating.

Slate — *64-bit x86 Operating System*

Implements support for modern hardware, including Paging and Virtual Memory, APICs, SMP, the HPET and LAPIC Timers, ACPI, AHCI, and PCI. Also includes a scheduler, general purpose memory manager, common data structures such as bitmaps,vectors, dynamic arrays, and rb trees.

Limine — *x86 BIOS Bootloader*

A highly configurable and customizable bootloader for x86 BIOS and CSM systems. Intended to easily and efficiently load kernels into 64 bit execution with little hassle. Provides an implementation of the stivale boot protocol, which provides higher half kernel support, elf loading, VBE framebuffers, 5 level paging, ACPI RSDP information, and SMP support. Has support for multiple boot protocols such as stivale, stivale2, linux, and chainloading. Has support for general file handling and multiple file systems including ext2, ext4, fat32, and echfs.

Flame — *64-bit x86 Operating System*

Flame was Shreyas's first dive into operating systems development. It originally started out as a simple 32 bit system with a tiny bootloader, however switched to GRUB and included a 32 bit pre-kernel to switch to 64 bit execution. It included drivers for legacy hardware, including the PIC, PIT, VGA, and IDE drives.

Image Artist — *Customizable Infographic Creator*

Image Artist was a project in Shreyas's AP Computer Science Principles class. It exposes a simple interface to allow users to easily create infographics, allowing one to add titles, subtitles, descriptions, and images. Exposes predefined settings for ease of use but also allows fine tuning values in the event that the predefined settings are not optimal.

PLANNED COURSES

AP Computer Science Applications — Dublin High School

Honors Digital Electronics — Dublin High School

CS20 — Las Positas: Advanced Programming with Data Structures/C++

CS21 — Las Positas: Computer Organization and Assembly Language Programming

REFERENCES

Lee, Thomas B.
AP CSP Instructor
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