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Brent Lee

I'm a high school junior. Wait! Bear with me for the next 30 seconds.
I am looking for an unpaid 125+ hour internship for Summer 2023. I am interested in all things tech. For a few highlights, please take a look at my **machine learning** and **embedded system** projects on the next page.

I'm currently dual enrolled in both the International Baccalaureate (IB) and Valencia Technology (Val-Tech) program at Valencia High School (VHS). I am a part of the E-Sports, CyberPatriot, Robotics, and Science Olympiad clubs at Valencia.

I am the president of the VHS E-Sports Club. I am very interested in Computer Science. One thing I really enjoy is **designing cool stuff** and **making them a reality**; it turns out that many projects like that involve CS.

I mainly use **Python**. Python has the most amount of and most useful libraries for the projects I get involved with. This is case for machine learning (**ML**) and **artificial intelligence (AI);** this is true for **cyber security** projects such as automating computer security during CyberPatriot competitions. In particular, Python within **Jupyter Notebook** is great. The combination lets me try ideas quickly. This is especially true for the ML and **machine vision** undertakings.

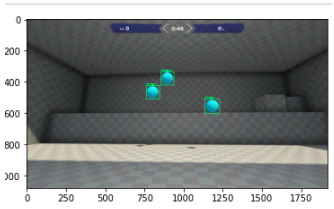
I game on a Windows PC for compatibility purposes, but the projects are done on an old Dell Xeon workstation running **Ubuntu Linux**. I bought this used on eBay. It's maxed out in memory, but due to the lack of a GPU, training an ML model is horrendously slow. Fortunately, because of the recent price crash, I was able to buy a new NVIDIA graphics card. I'm looking forward to the boost in processing power that it provides.

I have experience with **JavaScript** and **Java** as well. Java is a part of the CS advance placement (AP) class and IB CS curriculum, so it is unavoidable in any case.

I also have some experience with **CAD** software and 3D modeling. I learned quite a decent amount about **SolidWorks** from being on my school's robotics team and the mechatronics courses at my school. Knowing how to design parts was extremely helpful when designing my mechanical keyboard and a Bluetooth adapter for my HiFi wired headphones.

I have done some embedded system design. This was for my keyboard project: from **schematics capture and PCB layout** with KiCad, through firmware in **C for an Arduino SBC**, to integration and test with the host PC. I'm typing this now on the keyboard I built. Oh, in case you're wondering, a gaming keyboard is nothing compared to a high refresh rate monitor. You really can see the difference.

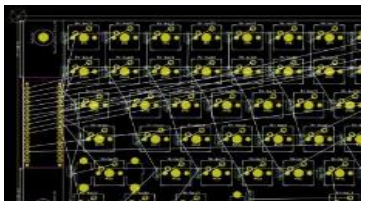
AimBot



Using computer vision and machine learning to make an accurate and extremely fast aiming robot.

Detail and source:
https://github.com/overlordpro-sys/cv2-aimbot

Gaming Keyboard

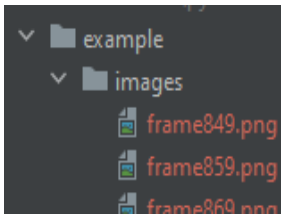


From concept, through design to manufacture my ideal mechanical keyboard.

YouTube:
https://youtu.be/BKlyYG0T2mQ

Detail and source:
https://github.com/overlordpro-sys/keycool84keyboard

AutoAnnotate



Python script to speed up the process of ML data annotation. Using a pretrained object detection model, the script automatically generates an xml file with the inferred bounding boxes for model training.

Detail and source:
https://github.com/overlordpro-sys/tfod-auto-annotate

Link to my website

Brent Lee

Education

Valencia High School

- 4.72 Weighted, 4.0 Un-weighted GPA
- International Baccalaureate (IB) and ValTech Diploma (technology focused) student
- IB courses in Computer Science, Math, and Physics

Extra Curriculars and Clubs

CyberPatriot – STEM program of the Air & Space Forces Association

- Consistent semi-finalist and platinum rank in CyberPatriot annual competition
- SoCal Cyber Cup cybersecurity competition finalist team

Valencia E-Sports Club

- Club President
- Planned and ran a successful tournament for club members

Robotics Team 4470

- Contributed to the building and programming of a robot with an articulated arm for the First Robotics Competition 2023
- Robot Vision Lead

Science Olympiad

- Member of the 2023 Science Olympiad team

Coding For Future Non-Profit Organization Co-Founder

- Founding goal: provide resources, teaching, and tutoring to low-income students for free
- Project manager and website Designer

Service and Volunteering

Yorba Linda Library

- Sign-up booth manager for summer reading program

Speech and Debate for Kids Non-profit Organization

- Re-designed and refined organization's website
- Worked with WordPress, HTML, CSS

East Lake Village Community Association

- Managed food and attraction booths
- Summer and Winter family events

Awards and Merits

- Valencia High Distinguished Scholar 2020-2022 (3.8+ cumulative GPA)
- Valencia High Honor Roll 2020-2022
- California Scholarship Federation Membership
- Val-Tech Diploma and IB Diploma Candidate
- UCLA Valorant Westwood Showdown Tournament Team MVP
- Medallist for Wi-Fi Lab in 2023 BirdSO Science Olympiad Invitational

Skills

- Proficient in Python and Java
- Knowledgeable about HTML, CSS, JavaScript, and Bootstrap
- Versed in 3D CAD and PCB design
- Experience with computer vision and machine learning
- Leadership and communication
- Comfortable working in a team environment