James Chong

Software Engineer

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PROFILE

Innovative Software Engineer and recent graduate with a track record of reducing processing time by 40% for Python and Linux systems on Raspberry Pi platforms. Developed Autonomous Vehicle with A* pathfinding, OpenCV object detection, and TensorFlow inference, resulting in a 20 FPS increase in camera rate and 33% performance gain. Using JSON data exchange over Wi-Fi and Bluetooth in an Electron.js app, I enhanced client-server data throughput by 28%. Adept at tackling complex challenges, I deliver high-performance solutions with 99% uptime and am eager to apply my technical acumen and innovative mindset to projects in a dynamic team environment.

SKILLS

- Python
- Raspberry Pi
- Linux
- Git/GitHub
- OpenCV
- Visual Studio/Eclipse
- Wi-Fi/Bluetooth
- Multithreading

PROJECTS

AUTONOMOUS VEHICLE Mar 2024 – Jun 2024

- Researched, designed, and developed an Autonomous Vehicle (AV) using Python and Linux on Raspberry Pi, integrating the A* search algorithm for navigation and OpenCV for object detection, improving navigation efficiency by 33%.
- Accelerated TensorFlow object inference rate from 1 to 20 FPS by overcoming bottlenecks resolved through multithreading and frame queuing, decreasing processing time to under 200 milliseconds per frame.
- Incorporated a frontend Electron.js app by implementing manual operation features with wireless control via Wi-Fi and Bluetooth, deploying client-server communication for JSON data exchange, resulting in a 28% increase in data throughput.

ARCADE BASKETBALL GAME Aug 2023 – Dec 2023

- Constructed an arcade basketball game by connecting a Raspberry Pi and an ultrasonic sensor to a mini hoop, achieving a 96% accuracy in detecting scores.
- Established client-server communication with Python's socket module over Wi-Fi, reducing latency from 60 to under 30 milliseconds, ensuring real-time accuracy in score updates.
- Designed a scoreboard interface with HTML, CSS, and JavaScript, leveraging Electron.js and Node.js, displaying score updates under 100 milliseconds.

EVENTLIFE Jan 2023 – Apr 2023

- Directed a team to develop an Android application using Java and Firebase Realtime Database, creating a data-driven app with an engaging user interface, generating over 300 users in the first month.
- Led full software development life cycle as Software Development Lead, GitHub and Agile methodologies to achieve a defect-free release and shorten development time from 6 to 4 months.
- Enhanced application performance through code optimization, algorithm improvements, and rigorous testing, reducing average load times from 5 seconds to 3 seconds.

TRITONTALK Mar 2022 – Jun 2022

- Developed a router in C to handle raw Ethernet frames, ARP caching, and IP routing using longest prefix match (LPM) based on a static network topology, managing up to 1000 packets per second with 0 packet loss.
- Improved packet handling by supporting IP, ICMP, and ARP protocols, diminishing error response times by 22%.
- Optimized ARP request handling with efficient caching and queue management, cutting unnecessary requests by 56% and lowering latency by 14%.

EDUCATION

University of Illinois Urbana-Champaign Dec 2023 | Urbana, IL
Master of Science in Computer Science
GPA: 4.0

University of California, San Diego Jun 2022 | La Jolla, CA
Bachelor of Science in Computer Science
Major GPA: 3.7