Tomer Sedan

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EDUCATION

The Pennsylvania State University   **August 2021 - December 2024**

Bachelor of Science in Computer Science, Minors in Statistics and Computer Engineering   *4.00 GPA*

Schreyer Honors College scholar, completing honors thesis in graph compiler optimization

Relevant courses: Operating Systems, Algorithms, Microprocessors, Computer Architecture, Computer Security

Stanford University   **June 2022 - August 2022**

CS 161, Design and Analysis of Algorithms, as part of accredited on-campus visit program

TECHNICAL SKILLS

Languages   C++, C, Python, Bash, ARM & x86 ASM, Perl, Verilog, Javascript, SQL, Java

Software & Tools   ROS 2, LLVM, OpenCV, ONNX Runtime, SDL2, Git, AWS Lambda & EC2, Linux, Cython, Snowflake

Knowledge Areas   Autonomous vehicles, operating systems, embedded microcontrollers, memory allocators, multithreaded systems, optimizing compilers, computer vision and graphics

WORK EXPERIENCE

Undergraduate Research Assistant, Stanford   **May 2024 - Present**

- Combining traditional video compression techniques (H.264) with modern ML-based image compression models using IDR-frame replacement, to obtain lower bitrates at high performance and visual fidelity.
- Working in Professor Tsachy Weissman's lab at Stanford; paper in progress.

Project Management Lead, PSU Advanced Vehicle Team   **January 2024 - Present**

- Leading the competition planning and execution efforts to build an L4 self-driving vehicle for SAE's AutoDrive Challenge II. Coordinating and managing work for over 50 students across 6 departments.
- Secured 2nd place autonomous route finish by building an object avoidance system using fused LiDAR.

Sensor Fusion Engineer, PSU Advanced Vehicle Team   **August 2023 - January 2024**

- Coordinated the efforts of the Advanced Vehicle Team's Perception department, covering object detection and reaction software using ROS.
- Stitched three camera and two LiDAR sensor feeds to obtain depth and velocity data for objects with a 150 degree field of view, up 67% from the original 90 degrees.

Data Science Intern, Wurl   **May 2022 - August 2022**

- Developed a reporting framework, giving 100+ content partners data-driven insight into their advertising performance with Wurl across streamers, channels, and providers.

RELEVANT PROJECTS

Optimizing LLVM Backed Compiler   **January 2023 - August 2023**

- Built a bespoke compiled systems programming language in C++ using LLVM.
- Architected language features such as type coercion, intrinsics, and a just-in-time compilation mode.

Education-focused Cython Game Engine   **October 2021 - February 2023**

- Led creation of an Entity-Component (ECS) game development library aimed towards young students.
- Designed rigid-body physics and a hardware accelerated 2D graphics model in C and Python using SDL.

AWARDS

Evan Pugh Scholar Award, The Pennsylvania State University   **February 2024**