

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 an honors thesis on graph compiler optimizations

Stanford University

June 2022 - August 2022

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

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 planned for submission in October.

Project Management Lead, PSU Advanced Vehicle Team

January 2024 - Present

- Leading 50+ people in competition planning and execution efforts to build an L4 autonomous vehicle for SAE's AutoDrive Challenge II. Managing both human resources and the overarching project tasking.
- Secured a 2nd place Intersection Challenge finish by building an object avoidance system that fused LiDAR feeds for railroad gate and child pedestrian detection.

Sensor Fusion Engineer, PSU Advanced Vehicle Team

August 2023 - January 2024

- Coordinated the efforts of the Advanced Vehicle Team's Perception department, aimed at 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.
- Integrated Tableau visualizations with data queried from Snowflake using SQL. Pulled graphs into document templates using Python in AWS Lambda, in an end-to-end automated reporting process.

RELEVANT PROJECTS

Optimizing LLVM Backed Compiler

January 2023 - August 2023

- Built a compiled systems programming language in C++ using LLVM, with performance matching C.
- Architected language features such as type coercion, compiler intrinsics, and a custom memory allocator.

Education-focused Cython Game Engine

October 2021 - February 2023

- Led creation of an SDL-based game development framework aimed towards young students.
- Designed fixed time-step rigid-body physics and a hardware accelerated 2D graphics model with C++.

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, MC9S12C128 Microcontroller

AWARDS

Evan Pugh Scholar Award, The Pennsylvania State University

February 2024