SHIRVIL SHETH

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EDUCATION

University of Michigan   Aug 2021 - May 2025
B.S. in Computer Science, Minor in Business; **GPA:** 3.6/4.0   *Ann Arbor, MI*
Related Coursework: Data Structures & Algorithms, Web Systems, Machine Learning, Artificial Intelligence, Computer Architeture, Computer Science Theory, Human-Centered Software Design, AI & ML in Investment Strategies, Financial Accounting, Finance

SKILLS

Languages : C++, C, C#, Python, JavaScript/TypeScript, HTML/CSS, SQL
Libraries : PyTorch, NumPy, Matplotlib, pandas, Django, Flask
Technologies : Next.js/React.js, AWS (Lambda, EC2, S3, Athena), Jupyter, PowerShell, Power BI, MongoDB, Adobe Suite, Figma

EXPERIENCE

Intel Corporation   May 2024 – Aug 2024
Software Engineering Intern (Crowdsourced Platform Validation)   *Hillsboro, OR*
- Implemented logistic regression classification algorithm using PyTorch, leveraging Roofline model and telemetry data, to predict whether workload is constrained by the CPU, NPU, GPU, or memory on Intel's newest chip (Intel Lunar Lake), achieving 94% prediction accuracy of resource utilization and memory constraints
- Developed multi-threaded framework in C# and monitoring dashboard using PowerBI to automate user satisfaction data collection on Intel drivers, solving the challenge of scaling manual lab testing via pop-up forms triggered by specific software and hardware events, resulting in 50+ hours saved per week for the internal PC validation team
- Optimized five popular video game titles (e.g. GTA, Tombraider, Assassin's Creed) using Intel's Application Optimizer in Python by leveraging telemetry data to identify optimal game settings for various Intel chips, graphics, and drivers, leading to significant 15% frame rate improvement on average across all games
- Streamlined installation process for in-house telemetry data collection tool across 200+ Intel systems by automating complex setup with PowerShell and Python, increasing tool usage and thus overall volume of telemetry data collection

Rocket Mortgage   May 2023 – Aug 2023
Software Engineering Intern (Workforce Analytics Department)   *Detroit, MI*
- Revamped company-wide employee data accessibility by creating search web page using React and AWS OpenSearch that allowed quick keyword searches that replaced manual SQL queries, freeing up 7+ hours per week for 5+ teams
- Enhanced data processing and workflow efficiency by architecting 5 AWS Lambda functions to automate routine data ingestion tasks from Workday, minimizing manual intervention and reducing team AWS costs by $1,000 YoY
- Utilized various AWS resources like Glue, S3, Lambda, Redshift to develop custom PowerBI dashboards displaying employee data and metrics, allowing leadership to derive new insights about employee performance and efficiency

Norma Group   May 2022 – Aug 2022
Software Engineering Intern (Software R&D)   *Auburn Hills, MI*
- Developed automated RFID scanning system with JavaScript and Siemens satellite technology to wirelessly check integrity of fluid line connections for automobile assembly lines in real-time, which previously relied on manual inspections, resulting in more consistent and reliable quality control and reduced fluid line validation time by 60%
- Designed and implemented 20+ unit tests and created real-time monitoring dashboard for RFID scanning system to ensure accurate detection of fluid line connections and validate communication with Siemens satellite

The Michigan Daily   Jan 2023 – Present
Web Developer (games.michigandaily.com)   *Ann Arbor, MI*
- Enhanced online engagement for The Michigan Daily by implementing interactive crossword puzzles in React and Tailwind CSS, attracting 5,000+ weekly players, and optimizing web elements to improve UI/UX, reaching 250,000+ unique monthly readers

PROJECTS

ChessAI | *C++, SFML, Minimax, Alpha-Beta Pruning*
- Developed full-featured chess engine in C++ and SFML, implementing all chess rules, flexible unit test framework, and AI adversary leveraging traditional Minimax algorithm with alpha-beta pruning for optimized decision-making

CPU Simulators | *C, Assembly, Caching, Piplining, Linker*
- Designed and implemented multi-file assembly and linking tools for a simplified assembly language, a pipelined processor simulator with data forwarding and branch prediction, and a unified instruction/data CPU cache simulator, gaining comprehensive insights into modular program organization, pipelined execution, and cache design

2D Raycaster | *C++, SFML*
- Implemented 2D grid-based game rendered into 3D perspective using raycasting. Includes per-column wall projection, distance-based shading, and dual-view system for bird's-eye and first-person perspective

BeTuned | *React Native, Tailwind, Spotify API, MongoDB*
- Developed mobile application using React Native and Spotify's Web API where users are prompted randomly throughout the day to share their recently played music, creating serendipitous moments of connection amongst friends

Custom E-commerce Platform | *React, Next.js, MongoDB, Stripe API, Tailwind*
- Developed full-stack e-commerce platform using Next.js, Tailwind CSS, MongoDB, and Stripe, which features an admin panel for product management and customer-facing website with search and purchase functionalities