TYLER GUEST

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SUMMARY

Emerging software developer with over 8 years of professional experience in production operations and workflow management. Currently pursuing a B.S. in Computer Science with a focus on Embedded Systems, C/C++ development, and System Architecture. Eager to leverage a strong background in quality control and technical problem-solving to contribute to the development and testing of complex hardware systems.

EDUCATION

University of Michigan - Flint | B.S. Computer Science (GPA: 3.89)   June 2023 - Dec 2027
• Relevant Coursework: Object-Oriented Programming, Data Structures, Algorithm Analysis, Computer Architecture,
  Operating Systems, Discrete Structures, Database Design

TECHNICAL PROJECTS

Memory Manager | C, Linux, Make | [source code]   Sep 2025 - Present
• Implemented a Two-Level Segregated Fit (TLSF) memory allocator featuring O(1) malloc/free via two-level bitmap indexing across
  30×32 segregated free lists, with 16-byte alignment and immediate coalescing.
• Designed a reserve-then-commit heap strategy using mmap/mprotect to pre-reserve 1GB virtual address space while committing
  memory on-demand, ensuring pointer stability during dynamic heap growth.
• Architected large allocation bypass (≥1MB) via direct mmap with O(1) tracking, plus boundary-tagged blocks enabling bidirectional
  physical traversal for efficient coalescing.
• Built 20+ unit tests covering double-free detection, block splitting/coalescing, in-place realloc, alignment verification, and
  benchmarks demonstrating ~5× throughput vs. system malloc.

Service & Inventory Database | SQL, PL/SQL | [source code]   Sep 2025 - Dec 2025
• Designed a relational database to track the full lifecycle of production jobs (Tickets -> Estimates -> Invoices), ensuring end-to-end
  traceability of parts and labor.
• Coded complex PL/SQL triggers to automatically deduct inventory and recalculate taxes upon sale, eliminating the risk of manual
  data entry errors.
• Implemented strict constraints to enforce data integrity, ensuring reliable reporting for stock levels and revenue.

EXPERIENCE

We Can Do It Graphics   **Flint, MI**
Lead Graphic Designer   May 2015 - Jan 2023
• Led a team of 5 in a high-volume production environment, implementing process improvements that increased throughput while
  reducing material waste.
• Performed final visual and dimensional inspections on production units, strictly adhering to client specifications.
• Managed the daily operation, calibration, and maintenance of wide-format industrial printing hardware to ensure consistent output
  quality.
• Utilized Adobe Creative Suite (Illustrator, Photoshop) to configure and validate vector files, verifying dimensional tolerances and
  file integrity prior to manufacturing.
• Maintained detailed production logs, inventory records, and order specifications to ensure full job tracking and accountability.

SKILLS

• Languages: C, C++, SQL, Python
• Software: Ubuntu 24.04, VS Code, Git, Excel, Make, Valgrind, VMM