ORNIE PAYER

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Skills

- C | C++ | Assembly (MIPS/ARM/x86) | Python | Java | JavaScript | TypeScript | ARM Cortex-M | STM32 | TI Tiva C |
- Arduino | Raspberry Pi | ESP32 | UART | I2C | SPI | ADC/DAC | PWM | FPGA (Verilog/SystemVerilog) | VHDL |
- Node.js | React | Next | Vue | Redux | jQuery | Express | SQL | MySQL | PostgreSQL | MongoDB | NGINX | REST API | CRUD |
- Git | Docker| CI/CD | Cloud Computing | Unit Testing | OOP | Agile | Scrum | Kanban | Figma | AWS | EC2 | Azure | GCE |

Experience

Lead Undergraduate Researcher **UB Department of Computer Science** *Buffalo, NY, USA* **08/2025 - 12/2024**

- Leading design and integration of hardware + software systems for adaptive communication devices supporting patients with neurodegenerative diseases and related. Designing and implementing control interfaces using Arduino, Raspberry Pi, ESP32, STM32, and TI Tiva C boards with I2C, SPI, UART protocols.
- Working with cross-disciplinary teams (nurses, OT/PT, caregivers) to define requirements and iterate prototypes that improved independence and daily quality of life. Delivering client-ready systems that addresses ethical, safety, and environmental constraints; authoring technical documentation and maintaining full design.

Head Undergraduate TA **UB Department of Computer Science** *Buffalo, NY, USA* **08/2024 - Present**

- Leading Computer Organization course as head teaching assistant for 250+ students and a team of teaching assistants, coordinating labs, recitations, office hours, creating and grading exams, and streamlining communication between faculty, teaching assistants, and students.
- Delivering instruction on complex topics including MIPS assembly, data paths, pipelining, cache, memory hierarchy, logic design, and System Verilog; adjusting teaching strategies based on student feedback and evolving course needs.
- Leading office hours, lab sections, and recitations for 650+ students in the Introduction to Computer Science course, delivering instruction on foundational topics including functions, control flow, data structures, and file I/O; collaborating with professors to help design and refine lab materials.
- Leading office hours and lab sections for 400+ students in the Computer Science 2 course, delivering instruction on advanced topics including unit testing, classes and objects, linked lists, trees, stacks, queues, graphs, inheritance and polymorphism; resulting in measurable improvements in student comprehension and exam scores.

Software Engineer Intern **Fresumes** *Buffalo, NY, USA* **08/2024 - 12/2024**

- Led development of an AI-driven resume database featuring mass messaging automation and candidate sorting.
- Implemented full-stack features with TypeScript, React Native, Node.js, and MongoDB; proactively improved schemas and indexes, boosting resume search speed by 40%.
- Wrote feature documentation and coordinated with developers and project managers in weekly Agile sprints to meet release targets.
- Migrated data from MongoDB to PostgreSQL, redesigned schemas, indexes, and queries, reducing query latency by 40%.
- Simplified software architecture from 5 repositories / 12 Docker containers down to 1 repository / 4 containers, cutting onboarding time by 50% and improving CI/CD pipeline speed by 60%.
- Implemented infinite scrolling and responsive UI layouts, significantly increasing user session duration and overall engagement..

Technical Intern **Back Market** *Brooklyn, NY, USA* **07/2022 - 08/2022**

- Automated battery health checks with scripts and enforced secure data-wipe protocols, achieving 100% secure erasure compliance.
- Performed comprehensive hardware QA audits (ports, Wi-Fi, LCD, NVRAM) and mystery-order checks across diverse electronic devices, significantly reducing device return rates.
- Built Salesforce / iAuditor dashboards to efficiently track refurbishment KPIs, streamlining quality control inspection process and enabling quicker decision-making.

Education

Bachelor of Science **University at Buffalo** *Buffalo, NY, USA* **08/2022**

- Major in Computer Science

Projects

- **Vital Care:** Remote Patient Monitoring Prototype that allows patients to track their health data and share it with their healthcare providers (Javascript, Python, C++, Docker, Arduino Sensors)
- **Automated Locker:** Assistive locker system for special-needs students with multiple prototypes including touchscreen keypad and RFID fob authentication (Arduino, RFID Modules, LCD Interface, Embedded C)
- **Brain-Computer Interface Speech Decoder:** Cross-platform app to record and visualize 32-channel EEG/audio data with real-time spectrograms and ONNX-based speech intent inference (Electron, TypeScript, BrainFlow, ONNX)