# Jackson Newman

Redwood City, CA, 94065 | 650-649-8204 | jpnewman167@gmail.com | linkedin.com/in/jacknewman |
https://github.com/JNewman-cell/ | jacksonnewman.netlify.app/

## Work Experience

**AMD** **San Jose, CA**
Software Engineer Intern, Internal Development Tooling June 2023 - September 2023

- Accelerated Vivado constraint processing by 50% with a new C++ pattern matching function.
- Developed unit tests achieving 100% coverage to ensure performance and accuracy for Wildcard Matching.
- Reduced Vivado memory usage by 2% by refactoring code to utilize Tessil C++ Hash map package.
- Decreased testing time by 80% through automation of memory and encryption performance tests.
- Cut Vivado project update time by 50% by automating encryption key upgrades for custom IP.

**Shellie.us** **San Francisco, CA**
Full Stack Software Engineer Intern, MERN Stack June 2022 - September 2022

- Created an edit page for online exhibits, allowing 50+ admins to update marketing and authorized users.
- Enhanced user experience, eliminating 100% of 30+ monthly inquiries about exhibit updates.
- Streamlined new exhibit page launches, reducing time by 60% (from 5 days to 2 days).

## Projects

**TinyGPT** | *Python, PyTorch, Numpy, Self Attention, Transformers*

- Implemented a cutting-edge language model using PyTorch, enabling the generation of text from input.
- Utilized advanced NLP techniques inspired by GPT-2, including Transformers, for effective pattern capture.
- Demonstrated expertise in training and optimization within the GPT-2 framework for text generation.

**Autoencoder Visual Classification** | *PyTorch, Numpy, Seaborn, Pandas, Matplotlib*

- Trained autoencoder for precise letter recognition and transistor positioning on MNIST and MVTEC dataset.
- Engineered efficient autoencoder architecture with optimized feature extraction for image classification.
- Demonstrated 100% accurate image classification using threshold pixel-by-pixel differences.

**Wafer Map Failure Classification** | *PyTorch, Numpy, Seaborn*

- Architected a 14-layer model classifying wafer types with $> 90\%$ accuracy using the WM-811k dataset.
- Devised Augmentation layers for a noise-resistant network, slashing 80% of random chip failures.
- Analyzed and visualized accuracy and loss throughout iterations to identify over- or under-training.

## Education

**University of California, Santa Barbara** **Santa Barbara, CA**
Bachelor of Science in Computer Engineering September 2020 - June 2024

**3.7 GPA, Dean's Honors, Relevant Coursework:**
Data Structures, Algorithms, Operating Systems, Applied Machine Learning and AI, Embedded Systems

## Technical Skills

**Programming Languages**: C++, Java, Python, C, SQL (Postgres), JavaScript, HTML/CSS
**Frameworks**: React, Node.js, Flask, Bootstrap, Material-UI, Storybook
**Developer Tools**: Git, Docker, Jira, Google Cloud Platform, Confluence, Perforce, NPM, Firebase, GitHub Actions
**Libraries**: pandas, NumPy, TensorFlow, PyTorch, Keras, Seaborn, matplotlib

- Demonstrated adeptness in Linux development at AMD through proficient command-line navigation, shell scripting, and utilization of development tools, showcasing a strong grasp of Linux-based environments and workflows.
- Demonstrated hands-on proficiency in automated QA, playing a key role in upholding rigorous quality standards for innovative software products.
- Applied my creativity, enthusiasm, and passion for technology to swiftly acquire proficiency in new programming languages and tools, making substantial contributions to diverse projects during internships.
- Utilized test engineering knowledge to diagnose, analyze, and resolve a variety of software issues.