Jackson Newman

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Education

University of California, Santa Barbara — Santa Barbara, CA
Bachelor of Science in Computer Science — ***09/2020 – 06/2024***

3.7 GPA, Dean's Honors, Relevant Coursework:
Data Structure, Algorithms, Machine Learning, Artificial Intelligence, Computer Architecture, Operating System

Experience

Software Engineer Intern — **06/2023 – 09/2023**
AMD — *San Jose, CA*

- Boosted Vivado constraint processing speed 2x via Wildcard Matching and optimized preprocessing in C++.
- Formulated unit tests covering 100% of cases to test performance and validity of new constraint processing.
- Trimmed memory footprint by 340MB by replacing hash maps with 3rd party package in C++.
- Cut testing times by up to 80% by automating testing for memory allocation and encryption performance.
- Reduced project update time by 90% by automating the process of changing encryption keys for IP.

Full Stack Software Engineer Intern — **06/2022 – 09/2022**
Shellie.us — *San Francisco, CA*

- Expanded functionality of a React website that accommodated hundreds of active users and dozens of companies.
- Designed a user hierarchy-based editing page for online exhibits, streamlining edits to webpages.
- Eliminated all user web page inquiries and reduced time to launch new exhibit pages by 40%.

Projects

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

- Implemented a cutting-edge language model using PyTorch, enabling the generation of text from input sequences.
- 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 robust text generation.

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

- Trained autoencoder for precise letter recognition and transistor positioning on MNIST and MVTEC datasets.
- 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.

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.