NATHANIEL LAM JOHNSON

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EDUCATION

University of Southern California   **Los Angeles, CA**
Bachelor of Science in Computer Science (GPA: 4.00/4.00)   May 2026 (Expected)
- Organizations: Center for AI in Society, Association for Computing Machinery, Vietnamese Student Association
- Awards: Presidential Scholar, Rales Scholar, W.V.T. Rusch Undergraduate Engineering Honors Program, Dean's List
- Relevant Coursework: Algorithms, Data Structures, Software Engineering, Object-Oriented Design, Operating Systems

SKILLS

Languages: C++, C#, C, Java, Python, SQL, JavaScript, HTML/CSS
Frameworks: Pytorch, Numpy, Pandas, Matplotlib, Seaborn, Flask, .NET, Node.js, TailwindCSS
Technologies: Git, Docker, Terraform, AWS, AWS EC2, AWS Lambda, AWS S3, MySQL, Linux, Windows, Agile, Scrum

PROFESSIONAL EXPERIENCE

Software Engineer Intern   **San Jose, CA**
Advantest   May 2023–Present
- Engineer multi-threaded test framework in Java with ZeroMQ messaging protocol to link customer programs to edge server, reducing quality testing latency by 60 percent, saving client $1 million dollars in test floor costs
- Verify and quantify framework latency improvements by programming benchmarks in Java and conducting statistical analysis in Excel and Python, presenting statistically significant results to team and customer
- Automate internal image pre-processing pipeline by programming data pipeline in Python to segregate images based on metadata, perform bounding box annotation, and upload data to AWS S3 bucket for AI model training
- Collaborate with a team of five to create machine learning object detection model based on YOLO and create continuous deployment pipeline in Python to identify missing components in manufacturing, reducing human quality inspection time by 10 hours per week
- Architect and develop SDK in C# and .NET to securely connect customer workstations with edge computing server by adding mutual TLS encryption and RESTful API principles, allowing for customer to reuse Windows workstations to monitor tests
- Build scalable document server for customer on AWS to deliver versioned documentation hosting for over 20 developer APIs, improving customer knowledge transfer process
- Design and build stress test simulation for AMQP networking protocol to identify bottlenecks and optimization opportunities for next generation of data collection and processing software in semiconductor chip testers

NeuroIOT Research Assistant   **Los Angeles, CA**
USC Information Science Institute   January 2023–May 2024
- Programmed data pipeline and trained inertial navigation machine learning model in Python to transform millions of raw sensor data points into low GPS accuracy dataset, allowing for further analysis by neuroscience researchers
- Monitored accuracy and metrics of new dataset by comparing AI model predictions to ground truth data using data visualization and artificial intelligence model performance evaluation methods
- Developed data segmentation pipeline using Python, Pytorch, and Meta AI segmentation model to identify and generate continuous measures for neuroscience research paper, processing over 50 hours of video on supercomputer cluster

Remote Product & System Tester Intern   **San Diego, CA**
CleverPet   May 2019–December 2019
- Worked with CTO to design, develop, and test three new pet training games in C++ for Cleverpet IOT device and mobile app, increasing user count by roughly one thousand users
- Led homebrew development team meetings to propose and implement new games for Cleverpet IOT device and mobile app, presenting to CEO and increasing homebrew developer retention by 20 percent
- Collaborated with social media team to create TikTok content showcasing pets playing with Cleverpet device

PROJECTS

Multimodal Hate Speech Detection Research Poster | *Python, Pytorch, Jupyter Notebook, Git*   January 2023–May 2023
- Led team of six in student research organization during weekly Agile meetings to train three image and text machine learning models based off various pre-trained multimodal encoders of to detect hate speech in multimodal Hateful Memes dataset
- Visualized model performance and dataset statistics using Python and Matplotlib, allowing for easy comparison of model performance and error analysis to inform future work
- Presented findings in poster form at USC ShowCAIS conference to over 100 students and faculty