Adnan Aman

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Education

University of California, Berkeley **Class of 2025**
Bachelor of Arts in Computer Science GPA: 3.6/4.0

Relevant Coursework:
Operating Systems, Networks, Data Structures, Efficient Algorithms and Intractable Problems, Computer Architecture, Introduction to Database Systems, Computer Security, Discrete Math and Probability, Optimization Models in Engineering, Machine Learning, and Probability for Data Science

Experience

Microsoft May 2024 – Present
Software Engineer Intern *Redmond, WA*

- Implemented distributed tracing for the Azure Machine Learning inferencing team, enhancing observability for over **2 trillion** monthly scoring requests using Go, Docker, YAML, and Python
- Configured and deployed OTel tracing agent, facilitating the exporting of traces across multiple distributed systems
- Integrated tracing capabilities into HTTP listeners using Envoy configurations, enhancing service observability
- Instrumented spans for distributed tracing within Go applications using OpenTelemetry SDK, enabling traceability
- Configured and onboarded a visualization tool for monitoring traces and connected services, improving debugging efficiency
- Collaborated with cross-functional teams to optimize and scale distributed tracing solutions through performance testing, resulting in more reliable and scalable systems

University of California, Berkeley June 2023 – August 2023
Academic Intern *Berkeley, CA*

- Worked as a lab assistant for UC Berkeley's Data Structures course with roughly ∼1600 students
- Assisted students with projects and labs in Java, helping to increase their coding and debugging skills
- Guided students to implement and experiment with fundamental algorithms and data structures through various projects and labs

Projects

MLP and CNN for Fashion MNIST and CIFAR-10 | *Python, PyTorch, Matplotlib* April 2024

- Designed and trained Convolutional Neural Networks (CNNs) for the CIFAR-10 dataset, achieving a test accuracy of over 82% after 10 epochs
- Utilized the ResNet architecture to train very deep networks through the use of residual blocks, mitigating the vanishing gradient problem and allowing for deeper, more effective learning layers
- Employed the Adam optimizer with an adaptive learning rate and set a small initial learning rate of 0.001 to avoid overshooting the minima
- Applied data normalization to standardize input data features, enhancing the model's ability to learn efficiently

YelpCamp | *Node.js, Express.js, MongoDB, Bootstrap* December 2023 – Present

- Developed a web application for campsite reviews, using Node.js, Express.js, and MongoDB, focusing on user-generated content, security, and data integrity
- Implemented user authentication, admin roles, and a review system in YelpCamp, to enhance application security and user interaction
- Integrated Google Maps API for interactive campsite location features and deployed Google Ads for revenue generation

Convolutional Neural Network Layers | *Python, NumPy* March 2024

- Implemented forward and backward passes for convolutional and pooling layers using efficient batched operations
- Utilized the `np.einsum` function for efficient computation of multi-dimensional array operations in convolutional layers
- Derived and coded gradients for convolutional layer parameters, ensuring accurate backpropagation

Technical Skills

Languages: Java, Python, Golang, C, C++, JavaScript, HTML, CSS, SQL, MQL
Frameworks and Libraries: React, Node.js, Express.js, Bootstrap, JUnit, NumPy, Matplotlib, PyTorch
Developer Tools: Git, Vim, Linux, MongoDB, LaTeX, Docker, Bash, Google Colab