Japinder Singh Narula

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Education

University of California, Berkeley August 2021 - May 2025
B.S. Electrical Engineering and Computer Sciences *Berkeley, CA*
- Courses: Data Structures, Algorithms, Circuit Design, OOP, Computer Architecture & Machine Structures, Computer Security, Intro to AI, ML, Computer Vision and Computational Photography, Robotic Manipulation and Interaction, Nanorobotics
- Campus Organizations: VP of Finance at Open Project, RoboBears, Cal Squash, Intl. Student Association, Intramural Soccer

Experience

Software Engineer May 2024 - August 2024
LegalZoom *Mountain View, CA*
- Optimized data capture workflows by designing new REST API endpoints with Spring Boot, reducing customer calls to customer care and improving overall user experience by enhancing data accuracy and backend efficiency
- Collaborated in design reviews with Compliance division SDEs and PMs, integrated front-end UI with newly developed APIs, refined database schemas, delivering seamless user experience and reliable data handling for customer-facing features

Data Structures Course Staff January 2023 - May 2023
University of California, Berkeley *Berkeley, CA*
- Aided students in developing thorough understandings of course content, assisting them in successfully completing labs

Software Engineer June 2022 - Aug. 2022
Pienomial *Remote*
- Utilized MongoDB to architect and implement intricate Merkle trees in both Go and Rust, enhancing system security via well-crafted scripts for diverse backend tasks

Community Service Officer November 2022 - June 2024
University of California Police Department *Berkeley, CA*
- Redesigned shift automation software using Google Apps Script, cutting scheduling time by 30% for 80+ department staff

Projects

Machine Learning: Nearest Neighbours for Geo-Location | *Python, PyTorch*
- Implemented k-NN regression using CLIP embeddings in PyTorch to predict image geolocations, achieving the lowest Mean Displacement Error (MDE) with optimal k
- Optimized model accuracy using grid-search, and visualized PCA results to analyze spatial trends in the dataset

LSTM Classical Music Generator | *Python, TensorFlow, Keras, music21, NumPy*
- Implemented LSTM-based sequence model to generate classical-style MIDI compositions, trained on preprocessed symbolic music data
- Engineered a full data pipeline for MIDI parsing, tokenization, sequence windowing, model training, and MIDI synthesis using `music21` and TensorFlow/Keras

Encrypted File Sharing System | *Golang*
- Designed a secure file-sharing system using RSA encryption for user authentication, file sharing, and file storage
- Created a comprehensive design document with struct definitions and detailed steps for function execution to meet functionality and security requirements

UCPD Community Service Organization Program Scheduler | *Google Apps Script*
- Developed a comprehensive scheduling program enabling automated data collection and shift assignment while factoring in several unique, job-specific criteria and constraints
- Implemented a custom matching algorithm, streamlining workforce management, enhancing resource allocation

Technical Skills

Languages, Tools, Frameworks: Python, Java, Kotlin, C++, C, OpenCV, PyTorch, sklearn, FastAPI, Keras, music21, JavaScript, TypeScript, Go, Apps Script, RISC-V, Spring Boot, Gradle, Next.js, Tailwind CSS, React, Remix, SQL, MongoDB, Postgres, CAD, ROS

Certifications

DeepLearning.AI TensorFlow Developer
Coursera
- Built a CNN for image classification achieving ¿90% validation accuracy on Fashion-MNIST using TensorFlow/Keras, implemented transfer learning with pretrained models, and deployed final model via tf.data and callback-based pipelines.
- Trained LSTM language models for text generation and created forecasts on time-series data (e.g. sunspot model) using dense nets and RNN architectures

IBM Data Science Professional Certification
Coursera
- Applied Python (NumPy, Pandas, Matplotlib, Seaborn) and SQL to analyze real-world datasets and build predictive models; developed end-to-end data pipelines and delivered insights through visualizations and model evaluation