Lyndon Yang

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Education

UC Berkeley, College of Engineering <div align="right">**Berkeley, CA**</div>

Bachelor of Science in Electrical Engineering and Computer Science <div align="right">May 2026</div>

- **GPA**: 4.00
- **Honors**: Eta Kappa Nu (Top 25% of Berkeley EECS), Tau Beta Pi (Top 10% UC Berkeley Engineering)
- **Relevant Coursework**: The Structure and Interpretation of Computer Programs, Data Structures, Discrete Mathematics and Probability Theory, Designing Information Devices and Systems I & II, Linear Algebra & Differential Equations, Computer Architecture, Efficient Algorithms, Optimization Models in Engineering, Extended Reality

Experience

UC Berkeley EECS - CS70 Undergraduate Course Staff 1 <div align="right">**August 2024 − Present**</div>

- Tutored students weekly in discrete math and probability theory, providing one-on-one and group support during office hours to reinforce understanding of course concepts and clarify challenging topics
- Graded homework and exams, offering detailed feedback to help students improve while ensuring accurate and fair assessment

University of California, Santa Barbara - Research Intern <div align="right">**June 2022 − August 2022**</div>

- Researched AI applications for detecting Coronary Artery Disease (CAD) risks using non-intrusive and intrusive medical data, developed a robust data pipeline, and trained multiple machine and deep learning models (LR, KNN, SVM, RF, FNN)
- Published a 10-page research paper and delivered findings at a formal research symposium and in front of scholarship donors

University of California, Los Angeles - Research Intern <div align="right">**June 2021 − August 2021**</div>

- Explored ML applications for stroke patient analysis, implemented and tuned hyperparameters for LR, KNN, and SVM
- Presented findings at a course project seminar, earning a nomination for best course project among 18 teams

Projects

Tumoraid | LangChain, FastAPI, Docker, AWS ECS, OpenAI API, Streamlit <div align="right">**July 2024**</div>

- Developed a web app combining a context-aware LLM with LangChain and OpenAI API to deliver multimodal, empathetic breast cancer support through few-shot prompting and the utilization of multiple custom-built AI models, and deployed it on Render
- Deployed 4 Dockerized AI models on AWS ECS via REST APIs for real-time tumor analysis, enabling image and tabular data uploads for tumor assessments with continuous conversational context

Breast Cancer Ultrasound AI | Python, PyTorch, TensorFlow, Keras, Pillow, OpenCV, Streamlit <div align="right">**June 2024**</div>

- Developed a multi-model pipeline for breast cancer detection using ultrasound imagings, performing semantic segmentation using DeepLabV3+ (ResNet 50 backbone) and image classification using a fine-tuned ResNet152, achieving a testing accuracy of 98%
- Created and deployed a Streamlit web app that generates overlaid mask images and performs real-time predictions

Quantitative Ensemble Cancer Detection | Python, TensorFlow, Scikit-Learn, XGBoost <div align="right">**June 2024**</div>

- Applied AI with ensemble learning and stacking techniques to classify tumors based on numerical data, trained and evaluated over ten machine learning models, including LR, SVM, KNN, RF, XGBoost, NB, DT, GB, AB, ET, DNN
- Achieved high mode performance, with an accuracy of 97.37%, precision of 97.61%, recall of 95.35%, and an F1 score of 96.47%

PantryZen | [Demo](#) | Next.js, React, TypeScript, Tailwind CSS, Firebase <div align="right">**August 2024**</div>

- Developed a real-time AI-powered inventory management dashboard featuring CRUD operations, advanced search and sort-by capabilities, and an AI-driven smart camera for seamless item addition via image recognition
- Leveraged Groq's Llama 3.1 8b LLM for rapid recipe generation, offering personalized meal suggestions, and crafted a responsive interface to deliver a consistent and optimized user experience across all devices

ProfQueryAI | Next.js, React, TypeScript, LangChain, Pinecone, Puppeteer, Clerk <div align="right">**September 2024**</div>

- Engineered an automated web scraper to efficiently extract and upsert professor data into a high-dimensional Pinecone vector database, utilizing embedding models from AWS Bedrock to enable rapid search and retrieval across large-scale datasets
- Integrated a Retrieval-Augmented Generation (RAG) pipeline with LangChain and OpenAI GPT-4o, alongside Clerk for user authentication, delivering secure, precise, context-aware responses to user queries with dynamic, real-time data updates

Build Your Own World | Java, Object Oriented Programming, Data Structures, JUnit Testing <div align="right">**April 2024**</div>

- Collaboratively developed a 2D tile game, utilizing a Minimum Spanning Tree algorithm for random and interconnected world generation, and implemented features like a line of sight toggle and multi-language support for enhanced gameplay
- Created a comprehensive design document to guide the project's development, detailing the data structures and algorithms

NGrams & WordNet Viewer | Java, Object Oriented Programming, Data Structures, JUnit Testing <div align="right">**March 2024**</div>

- Developed a Java-based clone of the Google Ngrams Viewer and implemented a WordNet lexical database, involved creating a browser-based tool for exploring the history of word usage in English texts and analyzing semantic relationships between words
- Implemented custom data structures to efficiently handle large datasets, including the creation of various classes for processing and visualizing historical word frequency data, enhanced the tool with interactive visualizations and a web-based interface for display

Technical Skills

Languages: Java, Python, C/C++, SQL (PostgreSQL), JavaScript, TypeScript, HTML/CSS, Scheme
Frameworks: React, Next.js, Node.js, FastAPI, REST, Firebase, LangChain, Clerk
Developer Tools: Git, GitHub, VSCode, Visual Studio, PyCharm, IntelliJ IDEA, AWS, Docker, Pinecone, JUnit Testing, Unity
Libraries: TensorFlow, Keras, PyTorch, Scikit-Learn, OpenCV, Pandas, NumPy, Matplotlib, Seaborn, Plotly, Tailwind CSS, OS