Nikhil Mathihalli

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EDUCATION

University of California, Berkeley   **Berkeley, California**
B.S. in Electrical Engineering and Computer Science   *Expected Graduation, Dec 2026/May 2027*

- o **Honors:** Regents' and Chancellor's Scholar (Top 2% of class)
- o **Concentration:** AI and Machine Learning; **Major GPA:** 4.00
- o **Related Coursework:**
  - o EECS: Artificial Intelligence, Machine Learning, Efficient Algorithms & Intractable Problems, Data Structures, Discrete Math and Probability, Computer Architecture (upcoming: Operating Systems, Deep Learning, Quantum Mechanics, Circuits)
  - o Mathematics: Linear Algebra, Differential Equations, Multivariable Calculus (USAMO qualifier)

WORK EXPERIENCE

Scale AI   **Remote**
Gen AI Technical Advisor Intern   *June 2025 – Present*

- Supported the development of AI/LLM models by evaluating model outputs and ensuring data quality.
- Collaborated with AI research teams to refine model performance through structured evaluation and feedback cycles.
- Hands-on experience with LLMs and real-world AI applications across various domains.

Hermis, Inc.   **Saratoga, CA**
Software Engineering Intern   *March 2025 – May 2025*

- Built CourseMate, a full-stack academic management platform using **Next.js**, **React**, **TypeScript**, and **Flask**
- Designed scalable **PostgreSQL** schemas for storing user data, academic records, and course content
- Developed secure **REST APIs** with **JWT authentication** and role-based access control using Flask
- Leveraged **v0.dev** to rapidly generate responsive UI components, then integrated with custom backend logic
- Implemented **AWS S3** for file upload/storage and deployed the app via **AWS EC2**, **RDS**, and **CI/CD** pipelines
- Created interactive dashboards with **data visualizations** to track academic progress and performance metrics

PROJECTS

AI-Powered Customer Churn & Startup Success Prediction   **Berkeley, CA**
Mentored by Manyam Mallela (Head of AI, Blueshift)   *March 2025 – Present*

- Developed a machine learning solution to predict customer churn from unstructured and incomplete CRM data
- Implemented preprocessing to clean scattered, incomplete data and engineered 15+ predictive features (e.g., account age, login frequency, etc.), significantly boosting model performance **96% accuracy** with gradient boosting (**LightGBM**)
- Engineered a data-driven classification system to evaluate start-up success using custom business logic based on operational status, years active, and funding levels, enabling robust labeling for supervised machine learning.
- Developed and tuned **XGBoost** models using custom cross-validation and resampling strategies, achieving optimized F1 scores through a manual grid search and advanced preprocessing with target and one-hot encoding.

Computational Biology Research   **Remote and Sunnyvale, CA**
Broad Institute of MIT and Harvard

- With Dr. Karthik Jagadeesh, streamlined GWAS and brain single-cell data analysis using Scanpy, Python3-adapted LDSC, and optimized preprocessing pipelines to identify cell types involved in neurological disorders (e.g., Tourette's).
- Built a protein similarity latent space using Facebook's ESMFold using UniProt data for feature extraction.

AWARDS

Math: 3x USA Math Olympiad Qualifier (Top 0.1%; 2021-2023)), 7x American Invitational Math Exam Qualifier (2018-2024)
Physics: 1x USA Physics Olympiad Qualifier (2024)

SKILLS

Programming: Java, Python, JavaScript, HTML/CSS, SQL, Node.js, React.js, C++, C, R
Tools: Android Studio, IntelliJ, PyCharm, Eclipse, RStudio, AWS, Jupyter Notebooks, Git
Technologies: React, Next.js, PyTorch, Pandas, TensorFlow, scikit-learn
Other: Advanced Problem Solving, Quantitative Analysis