

# Suriya Nithyanandan

908-395-1314 | [suriyansn5@gmail.com](mailto:suriyansn5@gmail.com) | [linkedin.com/in/suriyanithyanandan](https://linkedin.com/in/suriyanithyanandan) | [github.com/snith01-17](https://github.com/snith01-17)

## EDUCATION

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### University of California, Berkeley

*Bachelor of Arts in Computer Science*

Berkeley, CA

Aug. 2026 – May 2030

### duPont Manual High School

*Math, Science, and Technology Program | Valedictorian*

Louisville, KY

Aug. 2022 – May 2026

## EXPERIENCE

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### Machine Learning Researcher

*University of Louisville, Department of Computer Science*

May 2025 – Present

Louisville, KY

- Investigated CNN misclassification behavior on visually similar digit classes (3 vs. 8) using cosine similarity pipelines to compare 50,000+ image pairs
- Trained triplet-loss Deep Metric Learning models and autoencoder-based embedding networks; compared against standard classifiers using KNN on learned embeddings
- Applied CutMix augmentation and built representative-finding algorithms using pairwise Euclidean distance to identify prototypical misclassified examples
- Improved error coverage to 95% and generated 2,000+ visualizations of misclassified images and their nearest neighbors across embedding spaces

### Founding Engineer

*MoneyBot*

Nov. 2025 – Present

Louisville, KY

- Built full-stack financial education platform using Django and React, deployed across 12 schools in 5+ districts
- Engineered complete onboarding flow and authentication system with Google OAuth and Clever SSO for seamless school integration
- Developed the entire student portal and student-facing experience, including a gamification engine where students earn currency and purchase cosmetic items
- Built real-time analytics dashboards enabling educators to track student progress and engagement

## PROJECTS

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### ProfitQuest | *Django, React, HTML/CSS*

Mar. 2024 – Present

- Co-founded a nonprofit app for students using gamified lessons to teach financial literacy
- Built a full-stack app with 100+ users and led a 6-member team through all development phases
- Partnered with 4 Kentucky schools and ran 5+ financial literacy workshops for students
- Won the Congressional App Challenge, receiving recognition from Congressman Morgan McGarvey

### Parkinson's Disease Detection | *Python, XGBoost, scikit-learn*

Aug. 2022 – May 2023

- Built ML models analyzing spiral/wave drawings to detect Parkinson's; XGBoost achieved 80% accuracy with 1.0 precision

### Chronic Kidney Disease Prediction | *Python, ensemble models, scikit-learn*

Aug. 2023 – May 2024

- Predicted chronic kidney disease from 400 patient records with 98.75% accuracy using ensemble models validated with cross-validation

### Portfolio Optimization With Machine Learning | *Python, Markowitz, pandas*

Aug. 2024 – May 2025

- Compared investment strategies using 10+ years of stock data; Markowitz method achieved 23.16% annual return, growing \$100K to \$209K

## TECHNICAL SKILLS

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**Languages:** Python, Java, JavaScript, HTML/CSS, SQL

**Frameworks:** React, Django, Flask, Bootstrap

**Developer Tools:** Git, VS Code, PyCharm, IntelliJ, Figma, Google Colab, Jupyter Notebook

**Libraries:** TensorFlow, PyTorch, Keras, scikit-learn, pandas, NumPy, Matplotlib, Seaborn