

MANI VARDHAN KUMPATLA

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SUMMARY

CS student at Rutgers University (GPA 4.0) building and shipping complete ML-powered applications. Implements algorithms from scratch - least-squares solvers, ML pipelines, REST APIs - and deploys them. Strong in Python, JavaScript, and data pipelines. Every major project is live.

EDUCATION

Rutgers University Expected May 2027

Bachelor of Science in Computer Science - New Brunswick, NJ

GPA: 4.00 | Dean's List

Coursework: Algorithms, Numerical Analysis, Differential Equations, Data Management for Data Science, Discrete Structures II, Statistics I

Middlesex County College August 2025

Associate of Science in Computer Science - Edison, NJ

GPA: 4.00 | Dean's List

Coursework: OOP, Data Structures, Databases, Calculus I & II, Linear Algebra, Discrete Mathematics

TECHNICAL SKILLS

Languages	Python, JavaScript (ES2022), Java, SQL, HTML, CSS
Libraries & Frameworks	Pandas, NumPy, Matplotlib, Seaborn, scikit-learn, Flask, Plotly, Leaflet.js, Streamlit, mathjs
AI & APIs	Google Gemini API, scikit-learn ML pipelines
Tools & Platforms	Git/GitHub, Tableau, Excel, HTML5 Canvas API, SVG filters

PROJECTS

PolySketch - Browser-Native Curve Recognition Engine [Live Demo](#) [GitHub](#)

- Built zero-dependency math canvas in vanilla ES2022 recognizing freehand strokes as equations in real time - lines, circles, ellipses, and polynomials up to degree 8; no framework, no build step
- Implemented least-squares solver using Vandermonde design matrix + Gaussian elimination with partial pivoting; arc-length resampled strokes classified before fitting, marching-squares isoline tracer for implicit curves
- Integrated Gemini API image tracing (PNG/JPEG -> structured JSON of curve equations) and physically-based liquid glass UI via SVG `feDisplacementMap` + squircle SDF refraction math

Rental Price Estimator [Live App](#) [GitHub](#)

- Built full-stack US rental price predictor: Random Forest model on historical housing data with state-wise CAGR projections, served via Flask REST API
- Designed interactive frontend with Leaflet.js (geolocation map) and Plotly.js (dynamic charts) with real-time input validation
- Exposed `/predict` endpoint for geolocation-based inference; backend integrates housing feature pipeline with model inference in a single request cycle

Amazon Product Ranker [GitHub](#)

- Built Streamlit web app that scrapes Amazon listings, applies custom multi-factor ranking algorithm, and renders sortable results with price distribution analysis
- One-click product launch from ranked results; processing pipeline runs client-side in Python with no external database

EXPERIENCE

Middlesex County College November 2024 - Present

Tutor - Edison, NJ

- Tutor students 1-on-1 in Mathematics and Computer Programming; consistently requested by repeat students
- Developed problem-solving frameworks for multi-step proofs and algorithm design; coursework: Calculus, Discrete Math, Data Structures, OOP

CERTIFICATIONS

IBM Data Science Professional Certificate - Coursera (IBM) August 2025

Introduction to Git and GitHub - Coursera (Google) August 2025