

# Arnav Mabrukar

862-812-7987 | arnm1077@gmail.com | arnavmabrukar.vercel.app | linkedin.com/in/arnav-mabrukar | github.com/arnavmabrukar

## Education

Rutgers University-New Brunswick

*Bachelor of Science in Computer Science, Bachelor of Science in Data Science*

New Brunswick, NJ

Sep 2022 - May 2026

Relevant Coursework: Data Structures, Computer Algorithms, Systems Programming, Computer Architecture, Discrete Structures I & II, Object-Oriented Programming, Artificial Intelligence, Deep Learning, Statistical Inference for Data Science, Statistical Learning, Data Management for Data Science, Information and Data Management, Information Visualization, Linear Algebra, Calculus I & II

## Experience

Software Developer Intern

Progeny Health

Plymouth Meeting, PA

May 2025 – Aug 2025

- Optimized **Dockerfiles** to containerize **.NET applications** streamlining **CI/CD deployments**, improving deployment efficiency.
- Improved maintainability across **100K+ lines of C#/.NET code** using **SonarQube static analysis**, and increased automated test coverage to **90%+** by implementing **XUnit test suites** and enforcing higher code quality standards across backend services.
- Collaborated in **SAFE PI Planning** to align engineering deliverables with **business goals** and cross-functional stakeholders.

Freelance Full Stack Developer

Sonadia

Remote, NJ

June 2024 – Dec 2024

- Implemented production web pages supporting the platform's public launch, onboarding multiple artists and building a **Top Artists leaderboard** that drove **1K+ user interactions** across core discovery workflows.
- Enhanced application features during the **beta-to-public transition**, improving overall **UI/UX and responsiveness**.
- Integrated **crypto wallet connectivity** using **Rainbow, Coinbase Wallet, MetaMask, and WalletConnect**, enabling secure user authentication and foundational support for **digital asset interaction**.

Startup Founder / Computer Vision Researcher

National Science Foundation

Princeton, NJ

Jan 2024 - Apr 2024

- Constructed SynthSense, a **React Native** computer vision application using **OpenCV** and **TensorFlow Lite** to monitor delirium patients during sleep, enabling automated alerts and event tracking to support earlier intervention and reduce manual observation.
- Integrated **Azure Speech SDK** for voice alerts and an **SQL-backed data pipeline** for patient event logging, securing **\$3,000** in NSF funding, presenting at CES 2024, and conducting **50+ stakeholder interviews** to validate workflows and refine use cases.

## Hackathons

Rutgers University HackRU *Winner* – Dynamic React Native Mobile App

Oct 2023

- Earned **NJ Transit's** Best Transportation Hack by building a mobile app and **Django REST** backend for real-time transit routes.
- Integrated **Google Maps SDK** and **Places AutoComplete** to channel users to accessible stations with contextual routing insight.
- Utilized ChatGPT 3.5 Turbo API to create personalized full-day itineraries based on selected destinations and optimized routes.

University of Maryland Bitcamp 2024 – AI Financial Advisor

Apr 2024

- Built an AI-powered financial advisory app using **React** and **Django** to analyze expenses via **Capital One's Nessie API**.
- Integrated **Azure OpenAI Service** and **LangChain** to generate tax optimization strategies and personalized spending insights.
- Added **voice input/output** and **transcript tracking** with **Azure Speech SDK**, plus a disaster recovery advisor.

## Personal Projects

Neural Network Training and Evaluation

| Python, PyTorch, NumPy, Matplotlib

- Trained **fully connected and convolutional neural networks** on **MNIST**, achieving **97% accuracy** and improving validation performance by approximately **15%** through **hyperparameter tuning**.
- Built **end-to-end deep learning workflows** from model design through evaluation, including **real-time training metric visualizations** to support early stopping.

RecycleVision – AR Sustainability Education Platform

| Lens Studio, TypeScript, JavaScript

- Built an **interactive AR education platform** to teach **waste management concepts** to elementary students.
- Developed **Snapchat Spectacles-based AR interactions** that overlay real-world objects to differentiate recyclable materials from landfill waste, improving **visual recognition** through immersive AR.
- Designed **experiential learning flows** to encourage **sustainable habits** and improve **engagement** through real-time feedback.

## Technical Skills

**Certifications:** IBM AI Developer Professional Certificate (Exp. March) – IBM / Coursera, Tableau Essentials

**Languages:** Java, Python, JavaScript, TypeScript, SQL, C++, C#, C, R, HTML/CSS

**Frameworks, Platforms & Tools:** React, Next.js, React Native, Django REST, Spring Boot, .NET, Node.js, Flask, Redux, PostgreSQL, MySQL, MS SQL Server, PyTorch, TensorFlow Lite, OpenCV, LangChain, OpenAI Whisper, Pandas, NumPy, Watsonx, Docker, Git, SonarQube, XUnit, Material-UI, Figma, BeautifulSoup, Tableau

**Core Engineering Skills:** Full-Stack Development, End-to-End Systems, Customer-Facing Applications, OpenAI API Integration, Application Optimization, Relational Databases