SHYAM BHAGAT

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# EDUCATION

## DARTMOUTH COLLEGE Graduating June 2026

## Bachelor’s in Data Science (QSS) | Minor in Computer Science 3.62/4.00

Relevant Coursework: Object-Oriented Programming, Data Structures & Algorithms, Machine Learning & Statistical Data Analysis, Linear Algebra, Data Visualization, Multivariable Calculus

# SOFTWARE DEVELOPMENT PROJECTS

**CodePunk | Multiplayer Web Game** | **In Development** Oct 2024 - Present

*C++ | TypeScript (React, Node.js)*

* Built a TypeScript-based front end (React) for algorithmic puzzles and coding quizzes, delivering instant feedback (<250ms) to help college students prepare for exams.
* Optimized game logic with points, leaderboards, and adaptive difficulty tiers.
* Now integrating an AI-driven recommendation engine to provide personalized coding challenges and detailed feedback, reducing average puzzle solve time.
* Engineering a real-time lobby system and matchmaking logic in C++ that handles up to 10 concurrent players with <150ms average latency.

**DartSync | Local Backup Service** Jul 2024 – Oct 2024

*C++ | Windows API*

* Developed a multi‐threaded C++ command‐line utility for incremental file backups, delivering up to 50% faster average copy times compared to single-thread.
* Implemented optional Win32 GUI for real‐time progress logging and filter controls (file extension, max file size).
* Launched dedicated backup threads that run in the background to maintain a responsive GUI and minimize CPU usage, ensuring uninterrupted user interaction while copying large data sets (tested on 100GB+).

**Amazon Review Predictor | Machine Learning Project** Sep 2023 – Nov 2023

*Python | Machine Learning | Firebase*

* Achieved 84% accuracy in classifying customer sentiment using 10,000 reviews.
* Enhanced the model’s F1 score by applying hyperparameter tuning techniques (grid search, cross-validation), leading to a 44% improvement in precision and recall balance.

**Singapore Solar | Mobile Application & Website** Jan 2022 – July 2022

*Java | Python | Flutter*

* Developed a mobile application (Java, Android Studio) and website to monitor solar panel energy production in real time.
* Integrated RESTful APIs to display solar performance metrics and implemented web-scraping backend in Python.
* Maintained 99.5% uptime for real-time monitoring; reduced API response latency by 60% through optimized queries (800ms to 300ms).

# SOFTWARE ENGINEERING EXPERIENCES

**UNIVERSITY OF WEST ATTICA** Athens

SWE Intern

*Python* | *React | JavaScript* | *MySQL* | *Bash* Jun 2024 – Jul 2024

* Developed an open-source Linux driver for the LD-350 lightning detector using Python; reduced data latency by 40% through MQTT and REST APIs.
* Built a JavaScript-based frontend website that processed 500 data points/second, utilized by 25+ researchers.
* Designed a scalable SQL database to store 1 million+ meteorological records, improving average query time by 200% compared to previous solution at company.

**CLEANEDGE WASTEWATER MANAGEMENT** Singapore

Data Engineer

*Java* | *Python* | *SQLite* | *Grafana* Jun 2022 – Aug 2022

* Automated daily reports for 250+ effluent parameters by creating Java-based scripts, reducing manual entry by 80% (30 to 6 manual columns) and saving employees ~1.5 hours/day.
* Developed custom dashboards in Airtable that cut data analysis time from 40 minutes to 20 minutes per day, enabling faster identification of critical trends. Created database in SQLite.

# SKILLS

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

**Frameworks / Technologies:** ReactJS, NodeJS, Flask, Android Studio, MySQL, SQLite, Grafana, AWS, Firebase, Docker, Linux, Git, Adobe Illustrator