

Abdullah Yassine

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PROFESSIONAL SUMMARY

Computer Science undergraduate with hands-on experience building scalable full-stack applications, real-time computer vision systems, and customer analytics tools. Skilled in machine learning, backend development, and systems programming, with a strong foundation in both theory and practical implementation. Eager to contribute to engineering teams solving complex problems through data-driven and user-focused solutions.

EDUCATION

• University of Colorado Boulder

BS in Computer Science

Boulder, CO

Expected May 2026

SKILLS

- **Languages:** Python, C/C++, Java, Scala, SQL, HTML/CSS, JavaScript, TypeScript, Bash
- **Web Development:** React.js, Next.js, Node.js, Express.js, Angular, Tailwind CSS, GraphQL, JWT, OAuth, MongoDB, PostgreSQL, Firebase, REST APIs
- **Machine Learning:** scikit-learn, TensorFlow, PyTorch, XGBoost, LightGBM, NumPy, Pandas, OpenCV, Hugging Face
- **System Administration:** Linux, Shell Scripting (Bash), Networking, Virtualization (VMware), NFS, DNS, SSH, Systemd, Cron
- **Cybersecurity:** Wireshark, Nmap, Metasploit, Burp Suite, OWASP ZAP, Hashcat, SQL Injection Analysis, Kali Linux
- **Cloud & DevOps:** Google Cloud Platform (GCP), AWS, Azure (basic), CI/CD (GitHub Actions), Docker, Docker Compose
- **Tools:** Git, GitHub, VS Code, Jupyter Notebook, Postman, Figma, Jira, Slack

PROJECT EXPERIENCE

• Renewly: Budget Tracking Web App

React.js, Node.js, Express.js, MongoDB, Plaid API

04/2025 - Present

Aurora, CO

- Engineered a full-stack finance app enabling users to track budgets and monitor transactions across 5+ linked bank accounts in real time.
- Secured user data with JWT-based authentication and bcrypt hashing, ensuring encrypted login and access control for all user sessions.
- Integrated Plaid API to ingest and analyze hundreds of real financial transactions per user, enabling dynamic budget updates and spending categorization.
- Designed and deployed 10+ modular React components with centralized state management to support seamless UI updates and responsive user interactions.
- Automated subscription renewal alerts via scheduled backend jobs, reducing missed payment incidents by an estimated 30% in testing.

• Retail Insights: Customer Purchase Behavior Analysis

Python, scikit-learn, pandas, Matplotlib, seaborn

01/2025 - 04/2025

Aurora, CO

- Analyzed over 500,000 e-commerce transactions from a UK-based retailer to uncover high-value product bundling and customer segmentation strategies.
- Applied the Apriori Algorithm to identify frequent itemsets, generating 100+ association rules to inform targeted cross-sell campaigns.
- Performed customer segmentation using RFM analysis, K-Means, and GMM; visualized clusters with PCA-reduced 2D plots to reveal behavioral patterns.
- Delivered actionable marketing recommendations, including loyalty incentives and reactivation strategies for at-risk segments, increasing potential ROI by an estimated 15%.
- Built scalable pandas-based data pipelines to preprocess and filter transactional data, reducing analysis runtime by 60%.
- Independently validated clustering outputs and refined segmentation criteria to align with business objectives and data-driven insights.

• VisionQuest: Grocery Produce Classification at Checkout

Python, PyTorch, KNN, VGG-16

08/2024 - 12/2024

Boulder, CO

- Built a real-time computer vision system to classify 20+ types of fruits and vegetables at checkout with 94%+ accuracy, reducing human labeling effort.
- Evaluated and tuned 4 distinct ML pipelines, leveraging transfer learning with VGG-16 to outperform baseline KNN by 22% in F1-score.
- Engineered an OpenCV-based preprocessing pipeline to normalize input images across 3 lighting conditions and varied backgrounds, increasing model stability by 15%.

• HatHub: Hat E-Commerce Platform

HTML/CSS, JavaScript, Docker, PostgreSQL

08/2023 - 12/2023

Boulder, CO

- Developed a responsive e-commerce platform for customizable hats, enabling product browsing, selection, and checkout across desktop and mobile devices.
- Implemented shopping cart, user account system, and admin dashboard with full inventory CRUD operations, supporting 50+ product SKUs.
- Deployed with Docker Compose, isolating backend, PostgreSQL database, and NGINX proxy into separate containers for streamlined scalability.
- Integrated secure session-based authentication with input validation to mitigate XSS and SQL injection vulnerabilities.
- Conducted usability testing with 5+ users and profiled site performance, reducing load times by 40% and improving mobile responsiveness.

RELEVANT COURSEWORK

Data Structures, Object-Oriented Programming, Machine Learning, Advanced Data Science, Cybersecurity, Linux System Administration, Computer Networking, Operating Systems, Database Systems, Systems Programming