BAZIL AKRAM

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U.S. Citizen — DoD Secret Eligible

CS graduate with experience in C++, C#, Python, Java and JavaScript. Strong OOP fundamentals, Agile SDLC, and testing/documentation practices. Comfortable with Git workflows, code reviews, and testable design. Background includes building research tools, computer vision pipelines, systems integration, and operational tools for real users.

Experience

Computer Science Intern, *Penn State Health — Jan 2024 – May 2025*

- Designed and shipped user data management app for physician workflows, supporting live edit/view for physician workflows; delivered in iterative sprints with ticket tracking and code reviews.

- Automated internal document handling using Power Automate and SharePoint, reducing manual load for staff and increasing reliability of internal records.

- Developed DSST-based cognitive assessment interface now in use by internal research teams.

- Evaluated DB technologies for long-term scale-up of internal records system; contributed to tool migration plan.

Selected Projects

Rodent Trajectory Tracker (Capstone)
Python, DeepLabCut, OpenCV.js

- Built a CV pipeline to detect and track a rat's head and limbs across maze videos using DeepLabCut.

- Reduced human labeling effort by overlaying predictions on video in real-time using OpenCV.js and a custom canvas layer.

- Developed CSV-to-video playback tool with toggleable overlays (trails, segmentations, grid).

- Deployed front-end interface enabling research teams to adjust playback speed, filter segments, and export video.

Cognitive Abilities Testing Tool
Power Apps, Power Automate, SharePoint

- Created DSST-style cognitive testing platform used by clinicians for behavioral evaluation and scoring.

- Automated scoring and data logging pipelines using Power Automate, enabling data sync with SharePoint lists.

- More than halved testing workflow time with real-time scoring and clinician-friendly GUI.

Clearance Tracker
C#, .NET, Blazor Server, EF Core, SQLite

- Built a role-tracking tool with state machine logic to manage clearance statuses (Pending → In Progress → Approved/Rejected).

- Designed Blazor front-end with interactive components (Advance, History modal, New Person form).

- Implemented audit logging with EF Core and SQLite, recording state transitions with timestamps and comments.

- Added dashboard statistics (counts, % approved) and unit tests (xUnit + EF InMemory) for core logic.

- https://github.com/BazilAkram/ClearanceTrackerApp

US County Data Explorer
JavaScript, Leaflet.js, Node.js, REST APIs

- Built interactive map application displaying county-level demographics (population, density, education, broadband, race, age, income).

- Implemented county selection (click or lasso), multi-county aggregation, and state-level autofill for comparative analysis.

- Automated data enrichment via Census ACS API and Mapshaper-prepared GeoJSON, with preprocessing in Node.js, Integrating Census Bureau's RESTful ACS API for real-time demographic data ingestion and preprocessing.

- https://github.com/BazilAkram/US-County-Data-Explorer

- https://bazilakram.github.io/US-County-Data-Explorer/

Tenant Maintenance Request System
React, Node.js, SQL, JavaScript

- Built full-stack request management system with separate user roles (tenant, admin, maintenance team).

- Designed modals for request creation and status tracking with real-time database sync.

- Enabled tenant transfers, account deletion, and team reassignment through a unified admin panel.

- https://github.com/BazilAkram/Maintenance-Request-System

SUN Lab Access System
Node.js, SQL, HTML/CSS, Python, TKinter

- Developed front-end and back-end logic to log students in/out of computer labs and record time entries.

- Built audit trail functionality and account control panel with suspension/reactivation toggles.

- https://github.com/BazilAkram/SUN-Lab-Access-System

User Dashboard + Data Filtering Tools
React, REST APIs

- Created dynamic user dashboard pulling from a fake user API with real-time filtering by multiple attributes.

- Enabled profile card rendering with expandable metadata and responsive layout.

Education

Pennsylvania State University
B.S. in Computer Science — May 2025

Technical Skills

Languages: C, C++, C#, Python, Java, JavaScript, TypeScript, SQL, MIPS

Platforms/OS: Linux, Windows, PowerShell

Frameworks/Libraries: React, Angular, Vite, Vue.js, Next.js, Django, Three.js, Bootstrap, Materialize, Bulma

Tools: Power Platform, SharePoint, Git, OpenCV, YOLO, DeepLabCut

Awards

• Witham Trustee Scholarship — Merit-based academic award

• CWC First Year Award — Selected for top first-year academic performance