DHRUMIL PATEL

M.S. Computer Science

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EXPERIENCE

Cloud Engineer Co-op

Shaw Industries

Jan 2026 – Present Dalton, GA

- Support the Cloud Management team in managing and optimizing **Microsoft Azure** environments across enterprise workloads.
- Assist with **cloud cost optimization** initiatives by implementing **auto-shutdown schedules** and identifying underutilized or idle Azure resources.
- Work with **Azure tagging strategies at scale** to improve cost allocation, governance, and operational visibility.
- Develop and refine **automation scripts** to identify and remove **unused disks, snapshots, and orphaned resources**.

Tech: Microsoft Azure | Cloud Management | Cost Optimization | Auto-Shutdown / Scheduling | Azure Tagging | Automation / Scripting | Disks & Snapshots | Governance

Student Research Assistant

Synergy Evaluation Institute (UTK)

Oct 2025 – Present Knoxville, TN

- Design and maintain a **Python ETL pipeline** (**pandas/openpyxl**) to standardize "Served" free-text into a controlled **taxonomy**; generate legend-ready **codebooks/token maps** and clean export columns for **CLEE Map** outputs.
- Clean, normalize, and validate survey fields and response options to ensure consistent reporting (e.g., enforced **Likert ordering** from strongly disagree → strongly agree and consistent label visibility across visuals).
- Develop and iterate **Power BI** reports to communicate program evidence (respondent demographics, attendance counts, component agreement, and **pre/post** knowledge changes) using appropriate bar/stacked visualizations and structured response tables.
- Apply report UX and governance standards, including per-page **bookmarks**, an **Overview navigator**, consistent formatting with the **Synergy color palette**, removal of hidden/unused pages, and **dated PBIX versioning** with archival of prior builds.

Tech: Python | pandas | openpyxl | ETL | Data Cleaning | Taxonomy / Codebooks | Survey Analytics | Power BI | Bookmarks / Navigator | Versioning / Archiving | CLEE Map Exports

Assistive Technology Provider

MY LIFE PHILOSOPHY

"Karmanye vadhikaraste, ma phaleshu kadachana." — *Bhagavad Gītā 2.47*

You have a right to action alone, not to its fruits.

OBJECTIVE

I build reliable, user-centered software from ambiguous ideas; shipping practical AI and full-stack systems with clean APIs, strong observability, and measurable performance/cost wins. I'm especially drawn to real-time experiences (latency-sensitive pipelines, streaming UX) and enjoy going deeper into systems topics like compilers and computer architecture. I'm currently pursuing an M.S. in Computer Science (Intelligent Systems & ML) at the University of Tennessee, Knoxville while contributing part-time on campus.

Recent work

- **Real-time Speech & Video Translator** (*.NET 9*, *Azure*): ~0.2s median ASR→TTS, frame-level OCR overlays, SignalR live updates.
- AI/ML + full-stack builds across *C#*, *Python*, *TypeScript* with CI/CD, telemetry, and cloud deployments (Azure/AWS/GCP).
- Program-evaluation + data tooling for education initiatives: surveys, pipelines, and dashboards that turn evidence into action.

Selected wins

- 3rd Place - GitHub Copilot Hackathon (*Study-Buddy*)
- Winner - Azure Cosmos DB Dev Challenge
- Outstanding Computing Undergraduate Award; B.S. Computer Science GPA: 3.96; WAIE 2025 paper accepted

Seeking Internships/co-ops/full-time roles in **Software Engineering** (Full-Stack/Backend), **Cloud/Platform**, or **Systems / Compiler-adjacent** work. If you're building something impactful, I'd love to connect.

PUBLICATIONS

article

Student Disability Services (UTK)

Oct 2025 – Jan 2026 Knoxville, TN

- Triage and resolve assistive-technology issues across **JAWS/NVDA**, **ZoomText**, **Dragon**, **Kurzweil**, AAC/alternate input, and captioning/reading tools; author lightweight **SOPs** and maintain device/user profiles to enable faster, repeatable resolutions.
- Audit and remediate **Canvas**, **Microsoft Office**, and **PDF** course materials for accessibility; align deliverables with **ADA** and **Section 508** standards to improve screen reader and magnification workflows.
- Troubleshoot student and lab **PC** issues spanning software, hardware, and peripherals to restore reliable access to academic and assistive tools.
- Maintain incident documentation and support **loaner equipment** tracking to ensure continuity of accommodations and timely follow-up.

Tech: JAWS | NVDA | ZoomText | Dragon | Kurzweil | AAC / Alternate Input | Captioning Tools | Canvas LMS | PDF Accessibility | Microsoft Office | ADA / Section 508 | Windows Troubleshooting | SOPs / Documentation

Full Stack | AI-ML Developer Intern

Magical Mates

June 2025 – Sep 2025 Remote U.S.

- Developed an AI-powered web platform and interactive plush toy supporting children's emotional well-being, implementing features like voice-guided activities, mood tracking, and parent tools using React, Tailwind CSS, and Python Flask, improving user engagement by 35% in beta tests.
- Implemented secure backend systems using Python Flask, Azure Cosmos DB (vCore), Azure OpenAI, Azure Cognitive Services, and ElevenLabs API, ensuring 100% HIPAA compliance and reducing API latency by 20%.
- Collaborated with clinicians and designers to deliver research-backed, inclusive, and secure solutions, leading to a 20% improvement in accessibility and usability scores during user testing.
- Containerized services and set up GitHub Actions CI/CD to Azure (ACR/Container Apps), adding health checks and structured logging for reliable, observable releases.

Tech: React | Tailwind CSS | Flask | Python | Azure OpenAI | Azure Cognitive Services | Cosmos DB (vCore) | ElevenLabs | Docker | GitHub Actions | HIPAA

Web Developer Intern

Georgia Southwestern State University

Jan 2024 – May 2025 Americus, GA

- Built responsive, ADA-compliant websites using CSS, JavaScript, and XML, and managed content within Cascade CMS, improving accessibility scores by 30%.
- Developed and deployed dynamic, data-driven forms that streamlined faculty and student workflows, reducing manual processing time by 40%.

- D. Patel and S. K. Mukkavilli, "A supervised ai agent using azure to enhance student learning and facilitate better ethos," in *WAIE: Educational Technology and AI Pedagogy*, 2025.
- D. Perkins, D. Hunter, D. Patel, and G. Flanagan, "Isolated sign language recognition with segmentation and pose estimation," Dec. 2025, arXiv preprint. arXiv: 2512.14876 [cs.CV].

MOST PROUD OF

Outstanding Computing Undergraduate Award
GSW (2025)
Award

GitHub Copilot Hackathon
3rd Place (Study-Buddy)
Devpost

Honors Lists
President's (4×), Dean's (1×), Honor's (1×)
Merit profile

Summa Cum Laude
B.S., Georgia Southwestern State University
Diploma

Azure Cosmos DB Dev Challenge
Winner (May 2024)
Achievement

SKILLS

Languages
C | C++ | Python | Java | C# | TypeScript | JavaScript | SQL | R | HTML | CSS/SCSS | XML | x86 Assembly

Systems & CS
Computer Architecture | Data Structures & Algorithms | Operating Systems | Linux | Computer Networks | Network Administration | TCP/IP | Routing & Switching | Agile

Hardware & Verification (Ramp-ready)
Digital Logic | Verilog/SystemVerilog | UVM | Testbenches | Coverage

Testing & Tooling

- Optimized CI/CD workflows to improve site performance and SEO, achieving a 25% faster load time and a 15% increase in search visibility.
- Created reusable templates/components and documentation for editors, improving content consistency and accelerating publishing across departments.

Tech: JavaScript | CSS | XML | Cascade CMS | WCAG/ADA | Forms | SEO | Git | CI/CD

PROJECTS

Study-Buddy (3rd Place, GitHub Copilot Hackathon)

LangChain, Python, Angular, Azure

- Voice-enabled AI tutor with text ↔ speech, real-time translation, animated avatar, expert personas, and multi-language support using Azure Cognitive Services and Azure OpenAI.
- Quiz engine generates questions from uploaded notes via Azure Document Intelligence; instant scoring, leaderboard, and performance charts.
- Collaborative study groups with chat, threads, file upload, and resource search (Tavily/Bing/Places); resume builder with AI suggestions.
- Azure Container Apps/Web App deployment; Cosmos DB (Mongo vCore), Blob Storage; GitHub Actions CI/CD.

Links: GitHub | Devpost

Sky Warrior

Python, Pygame, AWS, SQLite

- Top-down 2D space shooter with adaptive enemy AI (missiles/EMP), turbo boost and slow-motion mechanics, particle effects, screen shake, and minimap HUD.
- Level progression and high-score tracking via SQLite; assets hosted on Amazon S3 for lightweight builds.
- JSON-driven level/enemy configs and optimized collision handling (including missile–missile cases) using sprite groups for smooth frame rates.
- Iterated faster using Amazon Q Developer for refactors, performance patterns (sprite groups/particles), and edge-case handling.

Links: GitHub | Devpost

PantryShare — Food Rescue PWA

Vue 3, Node.js/Express, Firestore, Socket.IO, GCP

- Community platform that turns surplus food into meals: listers post items; volunteers claim via live map, one-tap flow, and in-app chat.
- Real-time matching with Haversine distance and pickup-window overlap; role-based access (Lister/Volunteer/Admin) with JWT auth.
- Impact dashboard estimates meals rescued and CO_2 avoided; mobile-first PWA with offline-friendly caching.
- Deployed on GCP; REST API + WebSockets; Firestore for listings, chat, and metrics.

Unit/Integration Testing | PyTest | CI/CD | Git/GitHub | GitHub Actions | Docker | Profiling | Performance Tuning | Observability | PyInstaller

Frameworks & Web

Node.js | Express | Flask | FastAPI | .NET 9 | React | Angular | Vue 3 | Vite | MUI | Socket.IO | SignalR | PWA | REST | WebSockets

AI/ML & Agents

LangChain | TensorFlow | FAISS | Azure OpenAI | Azure Cognitive Services | Azure Speech | Azure Translator | Azure Document Intelligence | Azure Computer Vision OCR | DALL·E 3 (Azure)

Data & Databases

PostgreSQL | SQL Server | SQLite | MongoDB | Firestore | Azure Cosmos DB (vCore)

Cloud & DevOps

Azure | AWS | GCP | Azure Container Apps | Azure Container Registry | Azure Web App | Azure Blob Storage | Amazon S3

Maps, Search & APIs

Google Maps JS API | YouTube Data API | Bing Search | Tavily | GIPHY | Google Places | Adzuna | JWT

Accessibility, Compliance & CMS

WCAG/ADA | HIPAA | Cascade CMS | SEO

Game/Graphics

Pygame

EDUCATION

Links: GitHub | Devpost

Earlent — Mental Health Companion

React/Vite/MUI, Flask, Azure OpenAI, Cosmos DB, LangChain

- AI companion for empathetic support: chat with speech-to-text/text-to-speech, personalized recommendations, and resource search (Google/Bing/YouTube/Places/Tavily).
- Core features: well-being routines, mood logging with AI insights, scheduled check-ins (web push reminders), anonymous login, secure password reset.
- LangChain tools + FAISS vector search for retrieval; data control (download/delete history) and full account deletion.
- Dockerized services; GitHub Actions CI/CD to Render; Cosmos DB (Mongo vCore) for scalable storage.

Links: GitHub | Devpost

AI Agent — Speech & Video Translator

C#, .NET 9, Azure, React

- Developed a full-stack AI agent for real-time speech and video translation, supporting both live microphone/camera input and uploaded files; built with C# backend and TypeScript/React frontend.
- Implemented live video translation: detects and extracts text from video frames (camera or upload), translates it using Azure Translator, and overlays translated captions onto the video stream in real time.
- Built speech-to-text and speech translation workflows using Azure Speech, delivering bilingual audio/text output; supports multi-language selection and instant transcript rendering in a modern web UI.
- Architected robust SignalR-based communication for real-time updates, modularized service layers for STT, OCR, translation, and video processing, and integrated error handling, configuration, and responsive UI for seamless user experience.

Link: GitHub

REFEREES

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Assistant Professor of Computer Science

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Assistant Professor of Computer Science

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Professor of Computer Science

Krystal Whittaker

M.S. Computer Science: Intelligent Systems & Machine Learning

University of Tennessee

2025 – 2027 Knoxville, TN

Relevant Coursework:
Compilers Construction (A/4.0)
Machine Learning (A/4.0)
Computer Systems Organization (A/4.0)

B.S. Computer Science

Georgia Southwestern State University

2023 – 2025 Americus, GA

Honors: Outstanding Computing Undergraduate Award; summa cum laude; President's List 4×; Dean's List 1×; Honor's List 1×

Relevant Coursework:
Cloud Computing (A/4.0)
Mobile/Distributed Computing (A/4.0)
Capstone Project (A/4.0)
Discrete Structures in CS (A/4.0)
Computer Architecture (A/4.0)
Design of Operating Systems (A/4.0)
Database Systems (B/3.0)
Data Structures & Algorithms (A/4.0)
Programming II (A/4.0)
Programming I (A/4.0)
Calculus I (A/4.0)
Elementary Statistics (A/4.0)
Physics I (A/4.0)

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Web Content Strategist

LANGUAGES

ENGLISH ●●●●○

HINDI ●●●●●

GUJRATI ●●●●●

A DAY OF MY LIFE

