

Hassan Ibrahim

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Education

Rutgers University — New Brunswick, NJ	Jan. 2026–Present
Bachelor of Science in Computer Science	
Middlesex College — Edison, NJ	Jan. 2025–Dec. 2025
Associate of Science in Computer Science, GPA: 4.0 — Dean's Honor List	

Experience

New Jersey Innovation Authority	Remote
<i>AI Fellow</i>	<i>Jan. 2026–May 2026</i>
- Delivered two production AI tools for a 3-person TechOps team serving 300+ users, doubling ticket-resolution throughput from 4 to 8 tickets per session. - Built a Python ML pipeline with KNN and Sentence Transformers for ticket classification and resolution-time estimation; automated inference, testing, and board updates with GitHub Actions. - Developed a privacy-conscious Amazon Bedrock RAG layer spanning 300+ documentation pages and translating stakeholder needs into production workflows.	

Public Invention

<i>Software Engineer, Volunteer</i>	Remote <i>May 2026–Present</i>
- Built a Python pipeline using the GitHub REST API, JSON, and Excel to validate project records and publish UI-facing project, skill, and repository-activity data. - Automated weekly data refreshes and synchronization of computed last-commit activity metadata with scheduled GitHub Actions workflows.	

HackRU

<i>R&D Team, Frontend Developer</i>	New Brunswick, NJ <i>Aug. 2026–Present</i>
- Shipped five merged Next.js, React, TypeScript, and Tailwind changes across 29 files for a 600+ participant hackathon, fixing responsive layouts and stale data while coordinating through Git/GitHub. - Rebuilt sponsor components and simplified custom cursor logic while redesigning the hero, navigation, schedule, FAQ, styling, fonts, and mobile layouts.	

IBM Z Student Ambassador

<i>Student Ambassador</i>	Rutgers University <i>May 2026–Present</i>
Build IBM Z and enterprise-systems knowledge through IBM Z Xplore training and partner with 3+ Rutgers organizations on technical workshops, career panels, and professional-development events.	

Projects

AtlasRU | Python, TypeScript, Node.js, PostgreSQL, pgvector | Live Site

- Built a production platform for 200+ Rutgers users, integrating a tool-calling large language model with live course data and collaborating with Design, Product, Data, QA, and DevOps.
- Created validated data pipelines for 9,453 courses and 50,196 offerings plus benchmark, replay, and regression tests for AI correctness, prerequisite safety, latency, and accessibility.

DermAI | PyTorch, ONNX Runtime, Flask, React | GitHub

- Fine-tuned EfficientNet-B0 across 8 classes to 98.96% test accuracy and 98.95% macro F1, then exported ONNX inference into an authenticated Flask/React application.
- Built image-upload, JWT authentication, health-profile, and scan-history workflows backed by SQLite for end-to-end model use.

Real-Time IoT Controller Bridge | Python, MQTT, AWS IoT Core, HID | GitHub

- Integrated controller input with AWS IoT Core through an asynchronous MQTT service using mutual TLS, modular adapters, and sequence-safe command delivery.
- Reverse-engineered stateful device commands through live MQTT inspection and added heartbeats, dead zones, disconnect handling, and clean shutdown.

Custom Memory Allocator | C, Linux, Make, Memory Management | GitHub

- Implemented a 4,096-byte fixed-heap allocator with 8-byte alignment, first-fit allocation, block splitting, eager coalescing, pointer validation, and an `atexit` leak reporter.
- Built correctness and stress tests for non-overlapping memory, reuse, coalescing, double frees, invalid and offset pointers, exact heap saturation, and five workloads repeated 50 times.

Technical Skills

Languages & Platforms: C, C++, Python, Java, TypeScript, JavaScript, SQL, Linux, AWS
Engineering & AI: Node.js, React, Next.js, PostgreSQL, REST, GitHub Actions, PyTorch, scikit-learn, ONNX Runtime, Sentence Transformers, RAG, pgvector
Role-aligned evidence: machine learning; artificial intelligence; data analysis; computer vision; image processing; automation solutions; model validation; performance testing; Python; PyTorch; Scikit-learn; data structures; algorithms; software development fundamentals; cross-functional projects